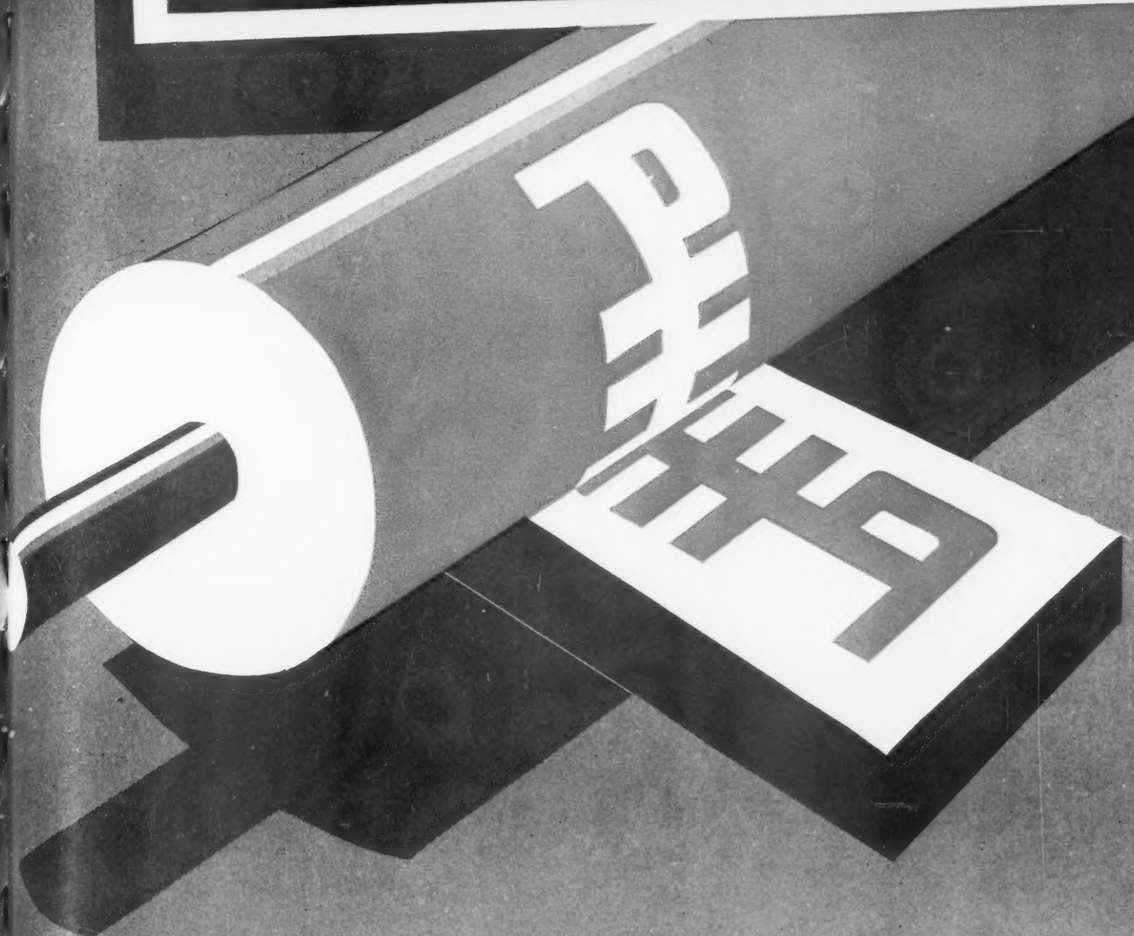
Printing Equipment Engineer



JUNE, 1942

★ ★

Unprecedented Demands

War is overshadowing everything in our lives. Printers' markets are changing to conform to its needs. Our country is under the stress of heavy demands—some foreseen and others unforeseen; government, war industries and civilian business requirements—all must be met to maintain the progress of war effort and other needs.

Quantity, quality, time—all elements of paramount importance—are factors of varying weight that will affect printing production. Unusual demands may strike any printing plant, in any locality, at any time. The graphic arts must meet these demands to fulfill its duty.

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F. D. R. REORGANIZES ARMY; MARSHALL SAYS TIME HAS COME TO CARRY WAR TO FOE
FARM BLOC GROPS CONFERENCE WITH ROOSEVELT ON PARITY PRICES
ALLIES COUNTERATTACK ON JAVA, FIERCE BATTLE RAGING; JAP DRIVE REPORTED CUT OFF NEAR BANDOENG
Japanese Invasion of Java
JAVA
DUTCH WRECKING INSTALLATIONS AT BATAVIA BOMBERS HAMMER INVADERS
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For help on current pressroom problems, connected with either blankets or rollers, please call upon us as usual.

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VULCAN

PRESS BLANKETS and INKING ROLLERS

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VULCAN

PRESS BLANKETS and INKING ROLLERS

Revised Explanations of WPB Orders Affecting the Printing Industry

A REVISED summation of War Production Board regulations and orders which directly affect the printing and publishing industry was issued on May 9 by Chief George A. Renard of the Printing and Publishing Branch. Among some of the orders and regulations which should be noted particularly by executives in the printing industry are those related to the initiation of inventories of obsolete printing plates and forms to determine which can be scrapped. In view of WPB's previous critical metals orders, this is an important matter to the industry. The Graphic Arts and related trades at present are excepted from coming under the Production Requirements Plan. Suggestions are made for the reconditioning of press cutting rubbers to conserve them. Please note shellac provisions. Five suggestions are made for conservation of materials by gravure printers. It is suggested that offset-lith printers substitute Furfuryl Alcohol for the alcohols previously used for deep-etch plates. Other important suggestions are made in the following summation:

ADHESIVES: No serious shortage at present time.

ALUMINUM: In order to receive consideration, users of powder, paste, ink and leaf should submit their inventory of each kind, and the quantity of each kind used in 1941. This information should be sent to Protective and Technical Coatings Section, Chemical Branch, War Production Board, Washington, D. C. Ref: M-1-g.

ANTIMONY: Supply is under allocation. Restrictions of Order M-112 have little effect on use of type metals, but require close control of antimony content by metal refiners.

BOARD: Binders', pasted and chipboard deliveries are reported much easier and more prompt.

BOOK-CLOTH: Order L-99 regulates the type of weaves to be produced on many looms and to what extent the output of certain fabrics shall be limited to government requirements.

Print cloths—(book cloth A- and B-groups) are not under limitation.

Sheetings—(1) (book cloth C-group) are restricted to 50% for war purposes and 50% for civilian uses; as the majority of looms weaving this grade of fabric are already producing nearly 85% of capacity for war needs (sandbag material), there is available but 50% of the remaining 15% of total capacity for civilian needs. (2) (book cloth C-1 group) are restricted 100% to government needs. (This grade is the 48 x 48 —40"—2.85 yds. per lb. grey base goods.)

Osnaburgs—(book cloth D group) all looms restricted to 100% government production.

Enamel ducks—(book cloth E group) looms not restricted to government production but no looms available for civilian production.

Summary: At present, probable shortages will occur in other than A- and B-groups after present stocks of grey goods in the warehouses of book cloth manufacturers are depleted. Manufacturers who weave their own grey goods report no prospective shortage in C- and C-1 fabrics in their lines for the present.

BOOK-CLOTH DYES: Conservation Order M-103 provides that the following organic anthraquinone dyes be set aside entirely for war use: Brown R CI 1151; Brown G CI 1152; Olive R CI 1150; Golden Orange G CI 1096; Golden Orange A CI 1097: Khaki 2 G; Olive T; Olive COL; Olive Green B; Yellow 3rd.

Uses of several other colors are restricted. There are adequate substitutes, but some fading may result from their use.

CASEIN: There is no shortage of casein and no shortage is anticipated.

CELLOPHANE: Amendment No. 3 to Order L-20 prohibits use of cellophane on paper and paper products, including window correspondence envelopes.

CHLORINE: Further restrictions (expected about May 1), have been postponed temporarily.

CHROMIUM: Under strict allocation. Use permitted for plating of printing plates and cylinders.

CONVERSION: This Branch is continuing to explore possibilities for sub-contracting on War production or for more complete plant conversion.

COPPER: Order M-9-c-3 sets a deadline of May 31st, 1942 for use of bronze powder, paste, ink and leaf in the printing industry. However, the Order permits any user who had a stock of these items on hand March 31, to use in the two-months' period ending May 31 one-sixth of his 1941 usage. Write to the War Production Board, Washington, D. C., Reference M-9-c-3, stating inventory of bronze powder, paste, ink or leaf (as of March 31, 1942), and stating use of these items during the year 1941. This letter must be submitted in quadruplicate.

Permission has been granted to bronze leaf makers to sell completed stocks on hand and to extend to their customers the right to use the material sold to them.

COPPER ORDER M-9-c: Copper Order M-9-c has been amended effective May 7, 1942. Special provisions affecting this industry read as follows: "The foregoing provisions of this Amended Order shall not apply to the use of Copper Products and Copper Base Alloy Products in typography, engraving, photo-engraving, gravure plate making, electrotyping, stereotyping and printing in the printing and publishing industries. In those processes, the use of bronze powder, bronze ink, bronze paste and bronze leaf is controlled by Supplementary Conservation Order M-9-c-3 effective March 28, 1942, and all other uses in those industries of Copper Products and Copper Base Alloy Products, including scrap, is hereby limited in any calendar quarter to 70% of the usage in the corresponding quarter of the year 1940. Nothing contained in this paragraph (F) (1) affects the prohibition of the manufacture of powder, ink, paste and leaf with Copper Products or Copper Base Alloy Products contained in this Amended Order."

COPPER SCRAP: Applications are being received by the Copper Branch for use of copper scrap under provisions of Order M-9-b. (Note that a plant which melts electrotype printing plates and sells the copper shells to a scrap dealer, does not need authorization to continue this practice, since this does not constitute "processing" copper scrap and therefore is not restricted by Order M-9-b.)

The following three classifications of use of copper scrap require specific authorization under M-9-b: (1) a plant using copper scrap which is generated entirely in its own plant; (2) a plant wishing to use or to salvage its own copper scrap and also to purchase from its customers such scrap as electrotype shells and photoengravings; (3) a plant wishing to have its own or purchased scrap melted and cast into anodes by an outside company, or to have electrotype shell copper reclaimed by an outside company.

In any of the above three cases or combination of cases, specific authorization should be requested by addressing the War Production Board, Washington, D. C., Reference M-9-b, stating clearly the nature of the operation for which permission is desired. (Note that authorization to use copper scrap will be confined to copper scrap from Graphic Arts processes, and will not include permission to use scrap copper wire or repair copper.)

FUEL: *Coal*—Plants should build up their coal stockpiles before the end of summer. Official exemption from inventory restriction has been granted.

Oil—Plants using oil should consider changing to coal, if coal-burning equipment can be obtained.

Combustion Equipment: Orders L-74 and L-75 limit the manufacture of coal stokers and oil burners to orders bearing a preference rating of A-10 or higher.

GASOLINE: At present, the gasoline rationing plan for Eastern States does not contemplate restrictions on gasoline consumption of commercial vehicles.

GLYCERINE: Under allocation control. Use for rollers not restricted at present, but use in adhesives for book and magazine production limited to 70% of 1940 usage.

INK: Orders M-53 and P-94 principally concern manufacturers, including those printers who make their own ink. Ink makers expect to meet most demands for the balance of 1942.

Order M-56 prohibits use of natural resins in spirit label varnishes, however the Order allows the use of Belgium Congo Copal. Also restricts their use in rotogravure inks to 75% of corresponding 1941 quarter, and in other inks and varnishes to 50%. Ink makers state that substitutes are available.

Use of Oiticica oil (tung oil substitute) now subject to restrictions of tung oil Order M-57.

INVENTORIES: No change in Priorities Regulation No. 1 which restricts inventories to "practicable working minimum". (Release T-166, dated March 18, 1942, discussed this subject and suggested suitable minimum periods for various materials.)

IRON AND STEEL: Sweeping restrictions and prohibitions under Order M-126, effective May 5th, 1942. After 90-day limited use, the manufacture of 400 common civilian products is prohibited except under certain conditions such as repair and maintenance. Inclusion of "mechanical book binding wire" on list refers to such types as "Spiral" binding, and not to regular stitching wire. Appeals under the Order will be handled by W.P.B. district field offices, not in Washington, and must be made on Form PD-437.

(*Continued on Page 76*)

What Becomes of the Ink?

AT a recent meeting of the Cleveland Craftsmen's Club, Craig Spicher's *Quiz Questions on Letterpress Presswork* were under discussion. One particular question provoked considerable interest. It was as follows: *It is claimed printing from rubber plates saves from 25% up in ink as against metal plates, and in addition gives complete coverage. If this is true, what becomes of the excess ink used in printing from metal plates?*

Harry Welty, technical advisor to the Braden-Sutphin Printing Ink Company, was called upon by Chairman M. L. Abrams of the M. L. Abrams Printing Machinery Company, to answer the question. He stated the surface of printing papers is not even throughout the sheet. Paper mills strive to make the surface of their stocks as level as possible, but despite the modern equipment and methods used, there will always remain minute hills and valleys in the paper due to the small irregularities left in the thickness of the stock. These thick and thin spots are easily seen when a sheet of paper is held up to the light, allowing the light to shine through the paper.

In printing from metal plates, (which are inflexible), thin spots in the paper tend to receive less impression than the thick spots and this uneven impression causes the ink to lay in an uneven film depth, bringing about the loss of color uniformity which we call mottling. The hard metal plate has merely forced the ink off the high spots of the paper down into the lower spots.

To overcome this unevenness, the pressman is forced to either carry an excess of impression, or to carry more color. Additional impression means embossing the stock, so he usually chooses the lesser of two evils and runs more ink which results in greater ink consumption.

When using rubber plates, however, it is not necessary to use a heavy impression to reach the low spots in the paper as rubber is flexible and will easily conform itself against the high and low spots of the stock with equal pressure, even when only a "kiss" impression is used.

This leaves an ink film of uniform thickness with complete absence of unsightly mottle. Only enough ink is required to barely cover the paper, and no excess of ink is needed to overcome the spotty effect gotten from the pressure of hard metal plates against the unevenly surfaced paper. In the end it means less ink is consumed in rubber plate printing.

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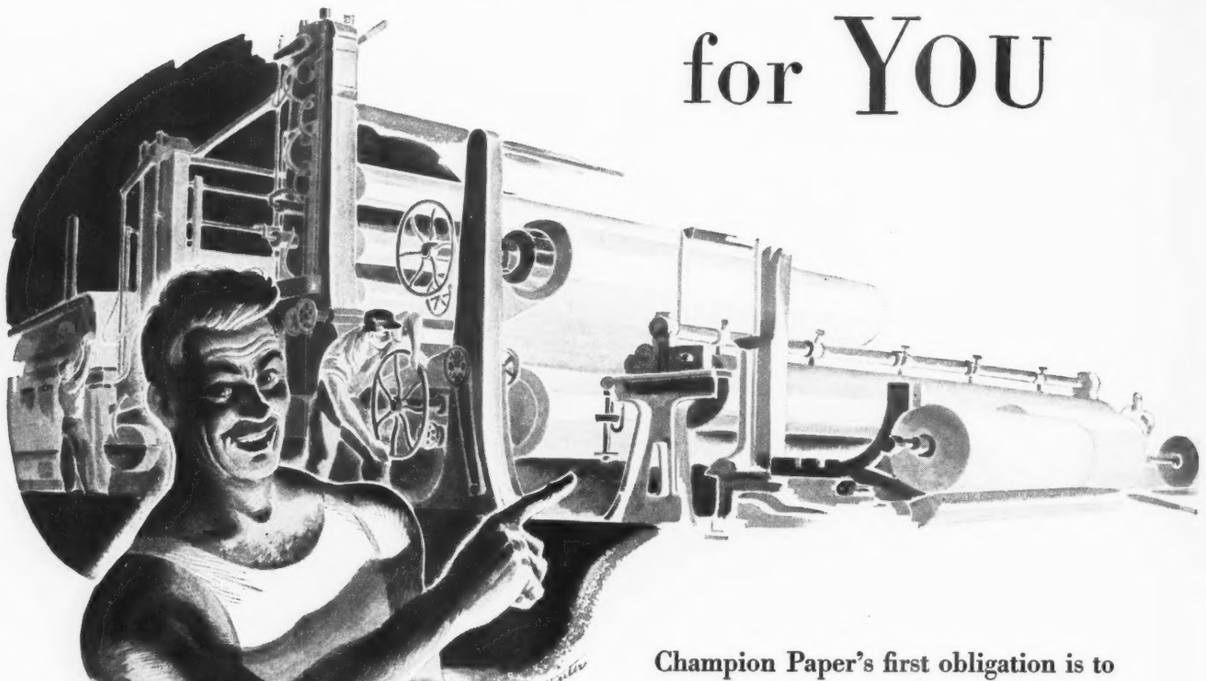

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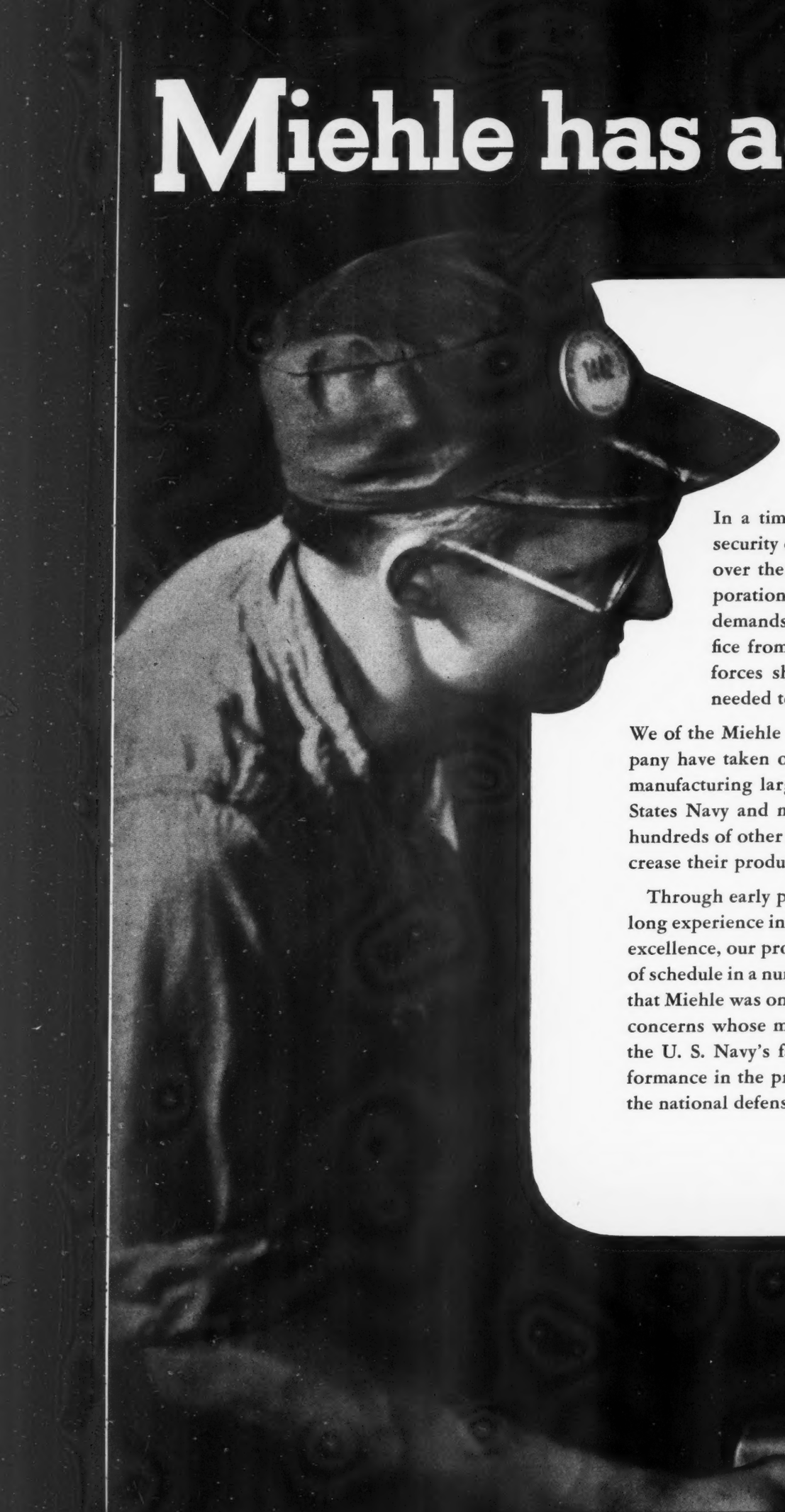

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AVAILABLE···*but* NOT PLENTIFUL

YOU have heard confusing statements concerning the availability of color inks during the war effort.

Some tell you that color ink raw materials are "critical" for war needs, and that the supply may become virtually non-existent for printers.

Others tell you that whatever restrictions may be imposed, America never will give up color printing. American ingenuity will prevail. Chemists will find new non-critical materials for color inks.

Somewhere between these extremes of pessimism and wishful thinking optimism lies the practical truth. Color inks will continue to be AVAILABLE. We believe it will be some time, however, before they will be PLENTIFUL. Therefore, color inks should be used wisely.

We have every confidence that should an acute shortage of color inks develop, Morrill ink chemists and practical printing experts will solve the problem if humanly possible.

Meanwhile, your immediate concern is to use the color inks now at your disposal with greater economy and effectiveness . . . without waste. Here no one in the world can be so helpful as the Morrill Service Man and the 100 years of ink experience which stand behind him.

Now, more than ever, it will pay you to put your ink supply problems in the capable hands of the world's largest ink-maker.

Inks by
THE WORLD'S LARGEST MAKER
MORRILL

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DIVISION
GENERAL PRINTING INK CORPORATION
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KEEP INFORMED FOR EFFICIENCY

The C&G No. 3-A Saw Trimmer is a production machine built to precision accuracy. It is easy and safe to operate.

A new circular describes in detail the Positive Work Holder, Any Angle Gauge, Balanced Saw Arbor with Automatic Indexing, Roller Bearing Gauge, patented Universal Saw Blades with Saw Grinding Attachment, and many other exclusive features. A copy will be sent at your request and without obligation.

The C&G Router, Jigsaw and Type High Machine helps keep profits in the shop that ordinarily would be sent outside.

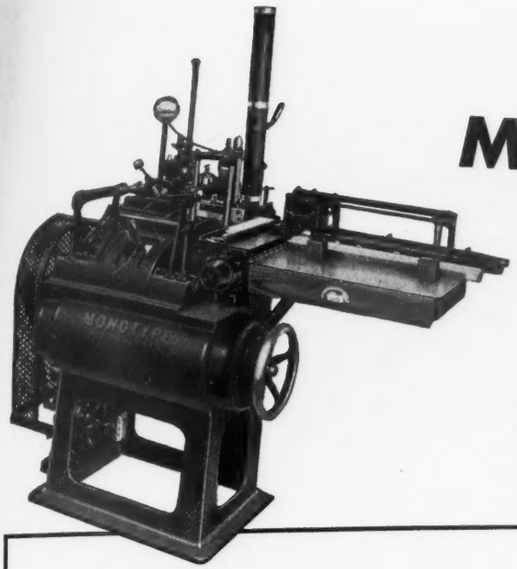
A new circular shows how outside and inside mortises, key changes, and hundreds of other time-saving jigsaw and routing operations can be done in your own plant. It tells how you can cut tint plates, rout out backgrounds, or plane to type high with a single investment.

Send for your copy of this interesting circular now.

MILWAUKEE SAW TRIMMER CORP.

610 EAST CLYBOURN STREET MILWAUKEE, WISCONSIN

THE MOST VERSATILE STRIP-MATERIAL MACHINE IN THE WORLD



The Monotype

MATERIAL MAKING MACHINE

Continuous-Strip Material

(Cast in Strips or Cut to Measure)

Straight-Line Rules—250 designs and sizes from 1½ to 18 point, inclusive.

Leads and Slugs—Either "high" or "low," in all sizes from 1 point to 18 point, inclusive.

"High" or "Low" Base—In 12, 18, 24, 30 and 36 point (strips 24 inches long).

Flush-Side and Full Face Rules—Cast flush on one or both sides; 1½ to 12 point body.

Want-Ad Rules—Special drive for resisting mat pressure; 1½ and 2 point.

Ornamental Borders—200 designs and sizes from 2 to 12 point, inclusive.

Wavy Rules—Several weights of rule face; sizes from 2 to 12 point.

Broaching Rules—With special shoulder, several weights and sizes.

Tie-Up Slugs—12 to 36 point, any desired height.

Electrotype Bearers—12 and 18 point. With firm name repeated, to identify foundry forms.

Single-Column Material

(Not Made on Other Continuous Strip Machines)

Leads and Slugs—1½ to 12 point, measures up to 15 picas in length.

Straight-Line and Want-Ad Rules—Many weights of face; 1½ to 6 point sizes; measures up to 15 picas in length.

Centered Dashes—A variety of designs and weights; sizes from 3 to 14 point; centered on measures up to 15 picas in length

Single-Piece Braces—Centered on measures from 4 picas to 15 picas in length.

Logotypes—Cast from slug-machine matrices in sizes from 6 to 18 point, centered on desired measures up to 15 picas in length.

Decorative End Rules—A variety of corner designs and rule faces in sizes from 3 to 6 point.

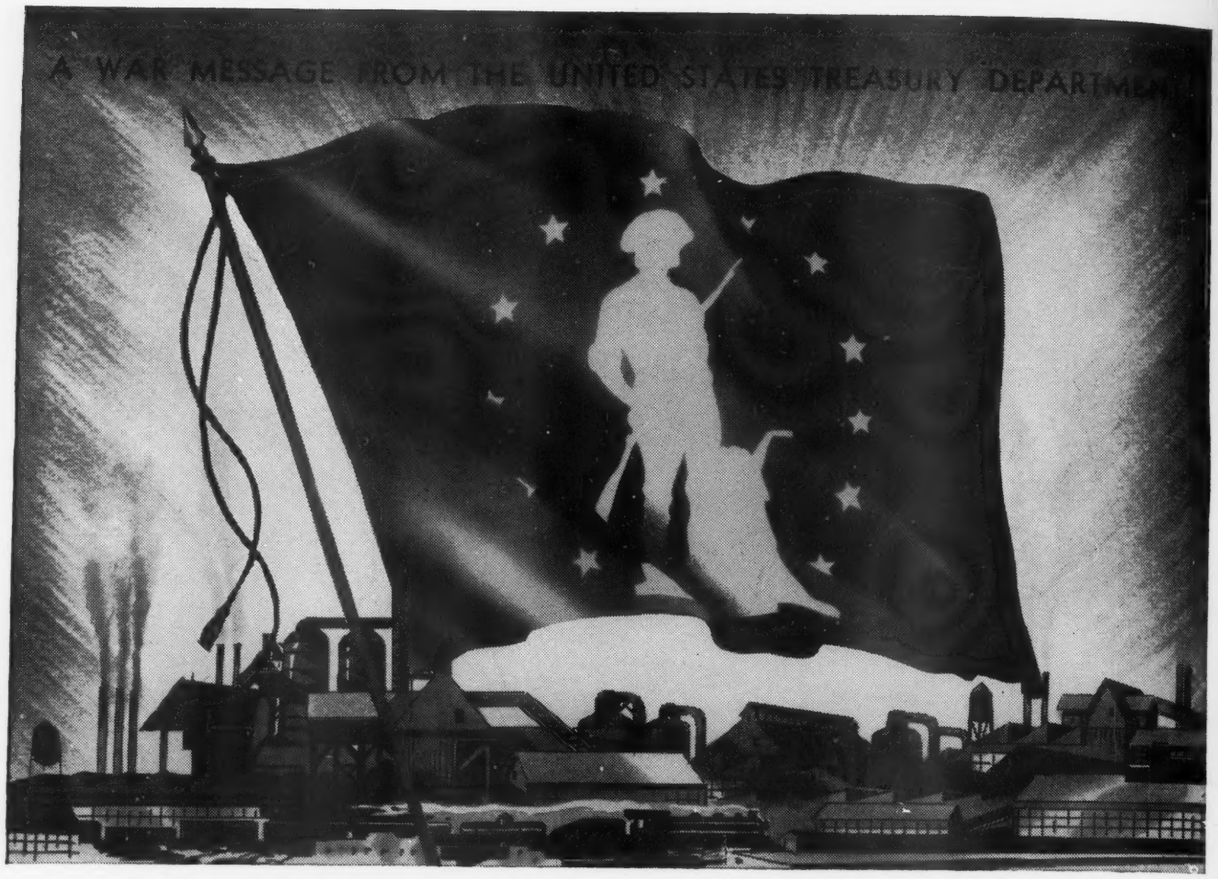
★

Write for Prices and Terms of the

NEW IMPROVED MONOTYPE MATERIAL MAKING MACHINE

LANSTON MONOTYPE MACHINE COMPANY, *Philadelphia, Penna.*

Composed in Monotype 20th Century Family and Monotype Stylescript, No. 425



Next to the Stars and Stripes . . .

AS PROUD A FLAG AS INDUSTRY CAN FLY

Signifying 90 Percent or More Employee Participation in the Pay-Roll Savings Plan

IT doesn't go into the smoke of battle, but wherever you see this flag you know that it spells Victory for our boys on the fighting fronts. To everyone, it means that the firm which flies it has attained 90 percent or more employee participation in the Pay-Roll Savings Plan . . . that their employees are turning a part of their earnings into tanks and planes and guns *regularly,* every pay day, through the systematic purchase of U. S. War Bonds.

You don't need to be engaged in war production activity to fly this flag. Any patriotic firm can qualify and make a vital contribution to Victory by making the Pay-Roll Savings Plan available to its employees, and by securing 90 percent or more employee participation. Then notify your State Defense Savings Staff Administrator that you have reached the goal. He will tell you how you may obtain your flag.

If your firm has already installed the Pay-Roll Savings Plan, now is the time to increase your efforts: (1) To secure wider participation and reach the 90-percent goal; (2) to encourage employees to increase their allotments until 10 percent or more of your gross pay roll is subscribed for Bonds. "Token" allotments will not win this war any more than "token" resistance will keep our enemies from our shores, our homes. If your firm has yet to install the Plan, remember, TIME IS SHORT.

Write or wire for full facts and literature on installing your Pay-Roll Savings Plan now. Address Treasury Department, Section D, 709 12th St., NW., Washington, D. C.

Make Every Pay Day "Bond Day"

U. S. WAR Bonds ★ Stamps

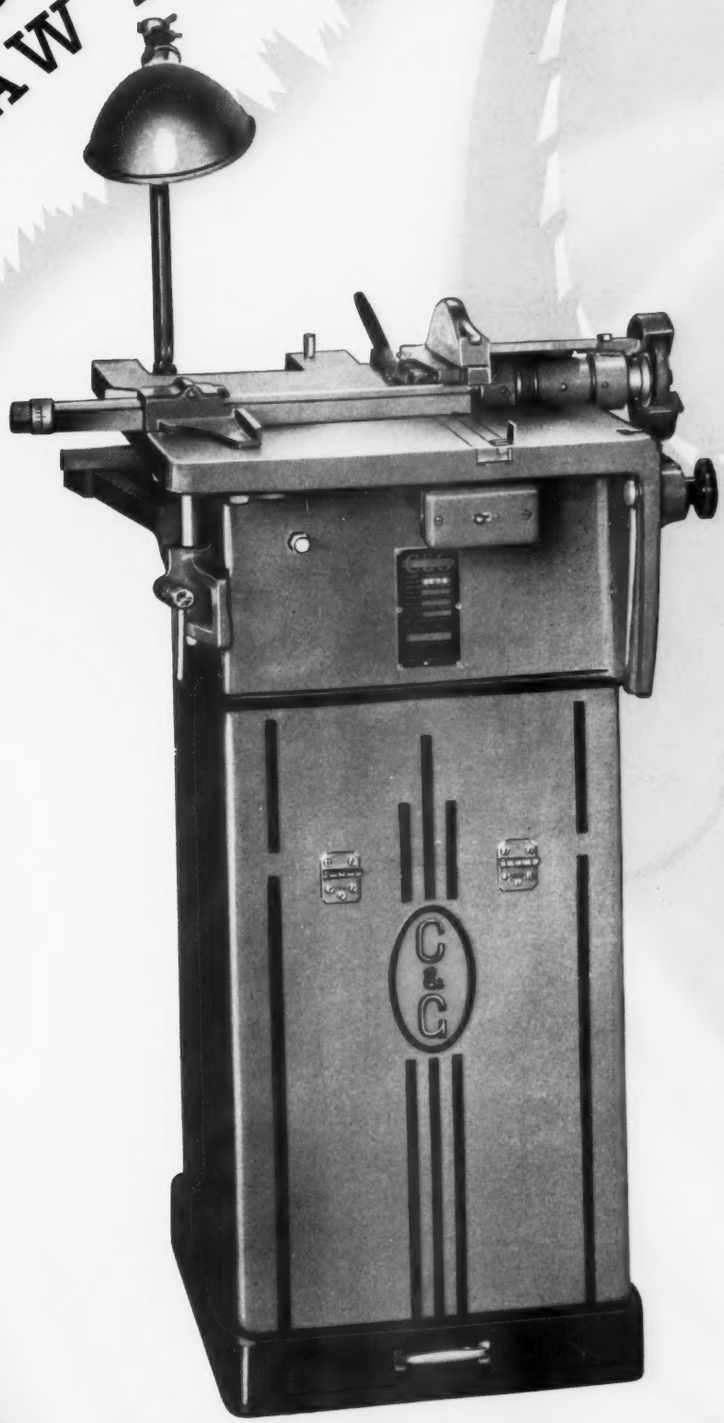
THIS SPACE IS A CONTRIBUTION TO VICTORY BY PRINTING EQUIPMENT ENGINEER

U. S. Government Printing Office 16—27879-1

Form No. DSS-BP-4

C&G

No. 3-A SAW TRIMMER



THE C&G No. 3-A Saw Trimmer was developed by its users. It is a high-speed production machine designed for accurate and efficient operation. Many exclusive C&G features have resulted in its ready acceptance among leading production executives.

Compositors like the C&G No. 3-A Saw Trimmer because it is easy and safe to use. Guards cover all moving parts except the essential working exposures. In sawing, the operator moves ***only*** the gauge and the material — ***not*** the heavy table. The change from sawing and trimming position to plain sawing, or undercutting, is almost instantaneous, and does not require the tedious screw adjustment of an elevating mechanism.

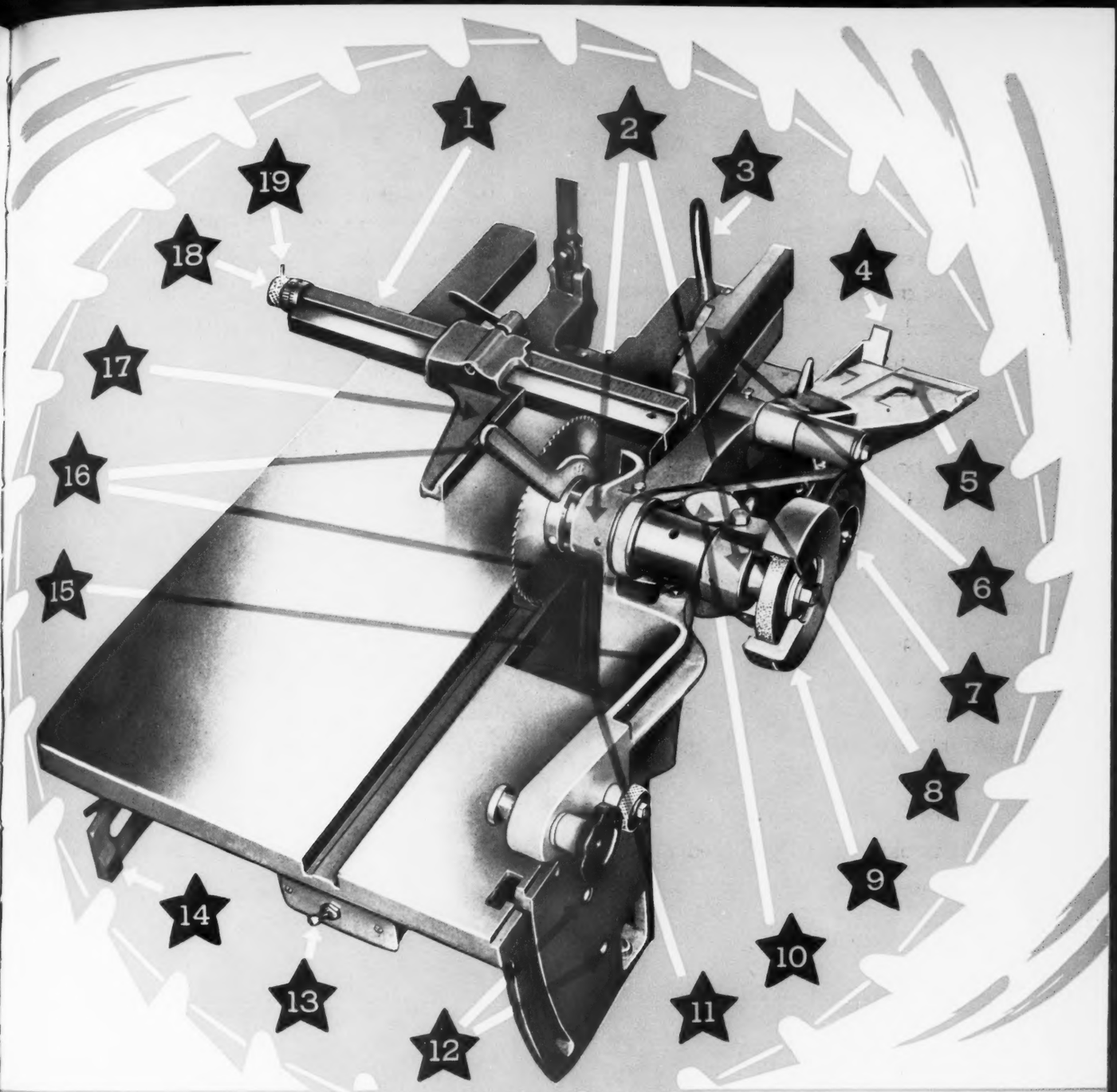
On C&G Saw Trimmers, material being sawed is placed and clamped in front of the gauge frame. This is a complete departure from the old fashioned method, and has been proved right, both in theory and practice. The C&G clamping arrangement speeds operation and promotes accuracy and safety. Slug fanning and jumping is almost impossible.

The C&G No. 3-A Saw Trimmer will solve any composing room sawing problem economically, efficiently and safely. The attachments illustrated on pages 5, 6 and 7 meet particular requirements. They deserve careful consideration.

C&G No. 3-A Saw Trimmers have replaced less efficient machines throughout the world. The evidence of customer satisfaction is in reorders. Time after time the installation of a single C&G Saw Trimmer has resulted in complete replacement of all saw trimmer equipment. One of your neighbors has a C&G No. 3-A Saw Trimmer. See it in operation. Write for list of users.

Features of the C&G No. 3-A

1. **Standard 73-pica Gauge. Gauge frame is constructed to take the largest overhanging display slugs. Antifriction device and roller construction facilitate easy movement. Pica or point measures may be set quickly and positively. Operator moves only Gauge and slugs. Table does not move.**
2. **Spindle is highest grade ball bearing construction. Ample oiling facilities are provided.**
3. **One movement of the locking lever securely locks material for sawing.**
4. **Saw Guard almost completely encloses saw. Guard is provided with friction adjustment to hold it at any desired position.**
5. **Sub-table automatically positions itself when saw is lowered for cutting through plates or undercutting.**
6. **Vise is quick acting and positive. Regular Vise Jaw Bar clamps 7½ inches (42-pica slug lengthwise). Extension Vise Jaw Bar is available for clamping plate matter up to 16 inches. Short measure clamping down to 8 points.**
7. **Motor is 1/3 H.P., long hour duty, insuring ample power for any sawing.**
8. **V-Belt Drive insures maintained pull and power during sawing operations.**
9. **Emery Wheel Guard gives utmost protection against accidental contact while sawing or mitering.**
10. **Lubricating device in the saw arm feeds oil through felt wick to the side of the saw blade, preventing metal from adhering to saw teeth.**



SAW TRIMMER

11 Flying chips are eliminated when cutting slugs or strip materials by the construction of saw arm which guides the chips into large wheeled waste receptacle housed within the base.

12 Two steel bushed holes, taking an index pin, provide definite positions for cutting and trimming slugs or sawing cuts. Any position for undercutting may be obtained quickly by movement of the balanced lever. Position is set by a turn of hand nut.

13 Switch is handy to operator. Wiring is enclosed in conduit. Convenient outlet boxes are provided for easy installation. Wiring passes inspection anywhere.

14 Extension Gauge swings under the table when not in use or it may be left at gauging position. It is always convenient to the operator.

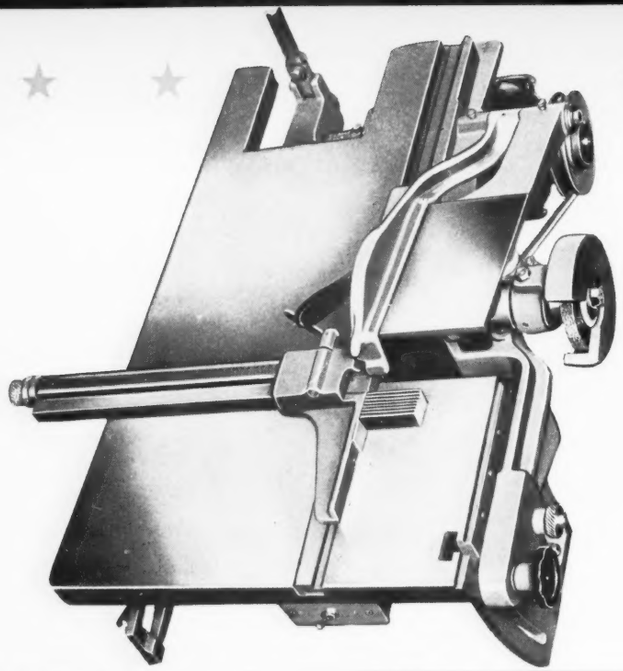
15 Ball Bearing Spindle Bracket, Motor Bracket, and Clamp Arm are all one casting. This sturdy construction insures permanent alignment.

16 Spindle Lock and Spanner Wrench facilitate removal of saw blade assembly from spindle. Saw blade is raised to completely clear table.

17 Pica End Gauge is instantly adjustable to picas. Movement is easy. Mechanism is sturdy.

18 Fractional point adjustments are easily obtained with micrometer dial. One full turn of dial moves end gauge one pica.

19 Six-point indicator provides quick and accurate setting for half pica measures.



C&G Positive Work Holder

Positive work holder permits sawing of measures as short as 8 points in length. Slugs as small as 9-point body can be clamped for lengthwise trimming.

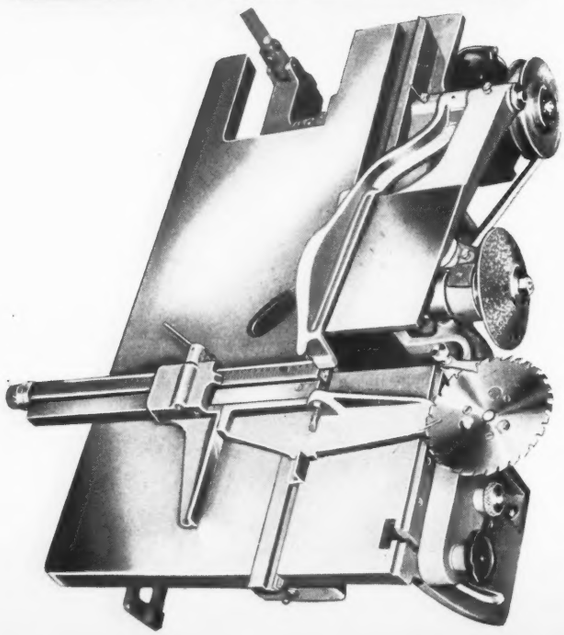
Type mortises for proper fitting of display type may be made without risk to the operator. The material clamp operates logically. The pull of the saw tends to hold the slugs compactly, rather than fan them, or cause them to buckle. The positive work holder of the C&G No. 3-A Saw Trimmer provides the ultimate in safety factors and convenience. Elimination of clamping hazards results in increased production.

C&G Universal Saw Blades
(Patented)

C&G Universal Blades are made from high speed tool steel under C&G patent. They are not to be confused with ordinary hollow ground brass blades.

Fewer sharpenings are required because C&G Universal Blades stay sharp 3 to 5 times longer than carbon steel, swaged blades, and patented design maintains permanent side clearance without swaging.

C&G Universal Blades saw all materials including linotype, stereotype, brass, copper, zinc and wood. They save valuable time lost in changing blades, or walking to saws designated for sawing special kinds of material.



Universal Saw Blade Grinder

The Universal Saw Blade Grinding Attachment is an exclusive C&G feature used with C&G Universal Blades. It eliminates the trouble and expense of sending blades out for sharpening, and will pay for itself many times over.

The Universal Saw Blade Grinder will sharpen a saw on the machine in about three minutes. No special skill is required. A device holds the saw to position for grinding on a grinder designed for the purpose. The angle of grinding is mechanically set. The position of cutting is in direct relation to the original teeth of the saw. There is no guesswork.

The Universal Saw Grinding Attachment may be placed on outstanding C&G machines.

Right and Left Hand Miter Vise

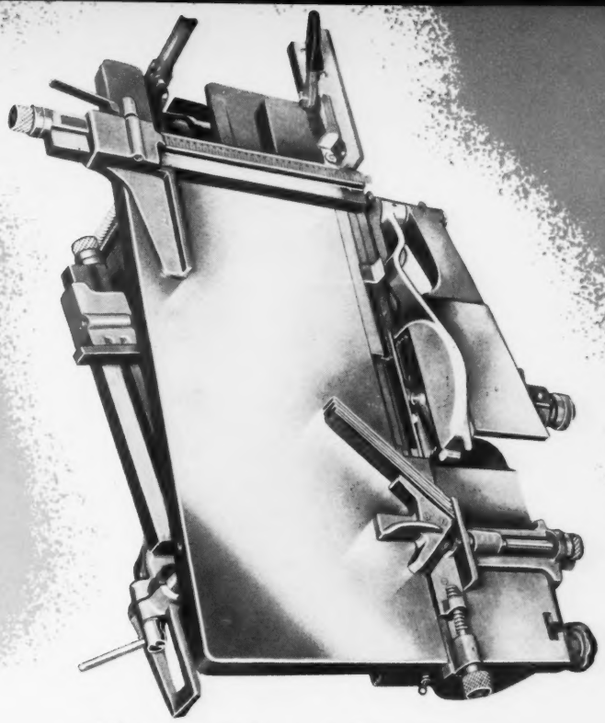
The Right and Left Hand Miter Vise is a vast improvement over all previous mitering attachments.

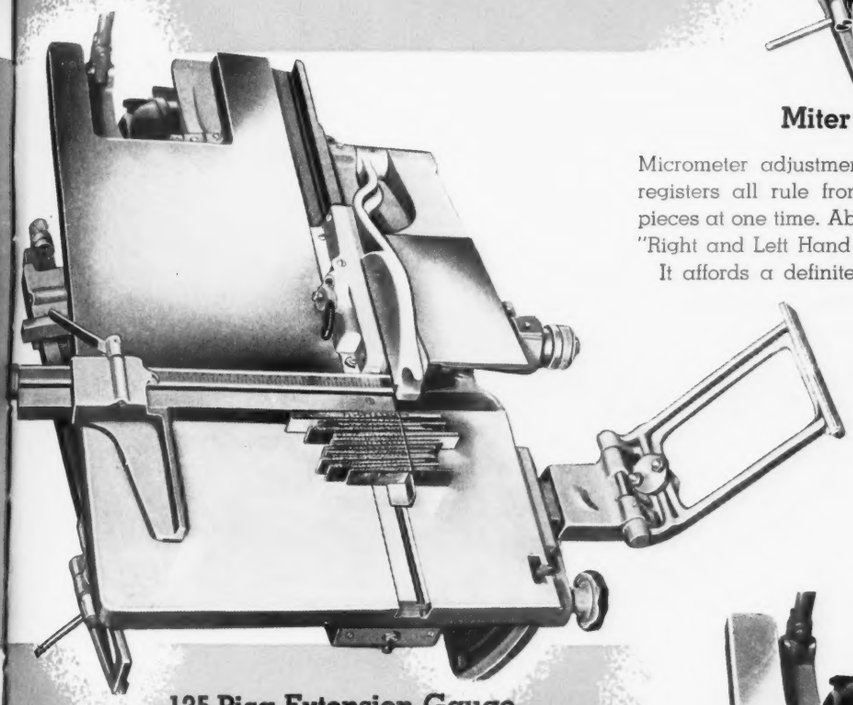
All miters are completed face up, eliminating the risk of damaging rule faces. Rule material from 1 point to 72 points thick can be handled, or several pieces of one point size to equal 72 points. Various lengths can be mitered simultaneously.

The Miter and Lineup Gauge or Standard Miter Gauge provides micrometer adjustment for gauging miters to thickness of rule from 1 point to 72 points.

The Right and Left Hand Miter Vise operates in the gauge bar channel without removing gauge frame from the saw, and does not require screws for attachment. Operation is fast and simple.

Illustration shows Miter Vise in use with Standard Miter Gauge, which is furnished with Standard Equipment. When Deluxe Equipment is ordered, Miter and Lineup Gauge is furnished instead of Standard Miter Gauge.





Miter and Lineup Gauge

Micrometer adjustment is provided for gauging all miters. It registers all rule from 1 point to 72 points, mitering several pieces at one time. Abutment face rests on table. (See illustration "Right and Left Hand Miter Vise," above).

It affords a definite straight edge for squaring plate matter. (See illustration "See-Through Guard," page 6).

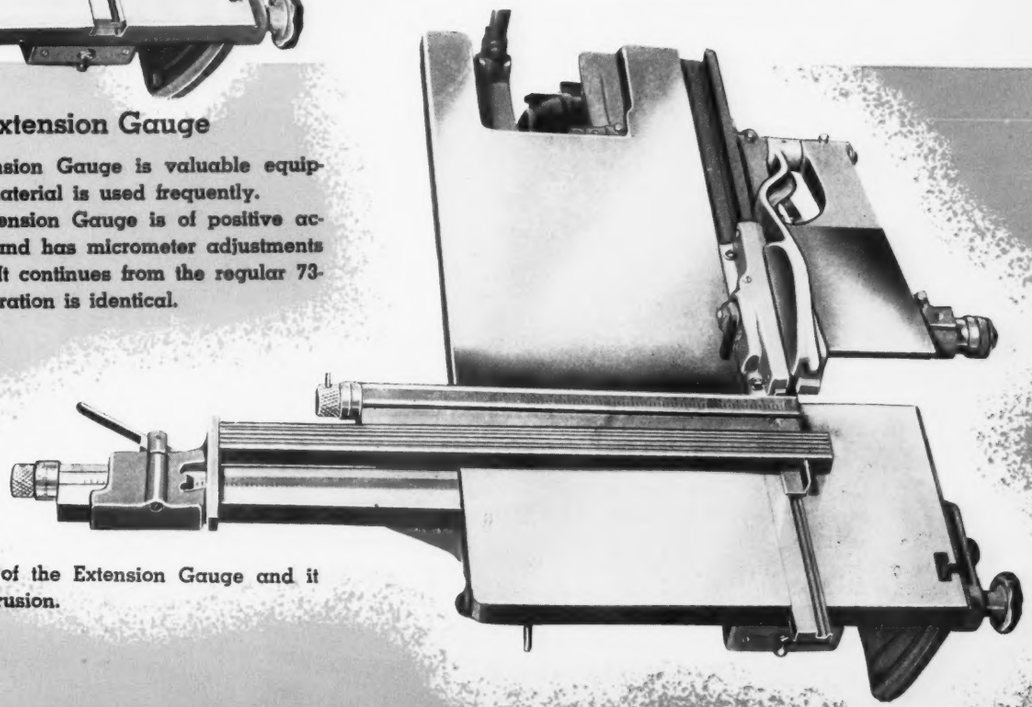
Lining up quadded slugs for simultaneous sawing. (See illustration opposite). Display slugs can be registered for separating single words or characters. For aligning slugs, Gauge is raised to permit quadded portion of slugs to slide under gauge until type shoulder strikes abutment face.

135-Pica Extension Gauge

The C&G 135-Pica Extension Gauge is valuable equipment where long strip material is used frequently.

The C&G 135-Pica Extension Gauge is of positive accuracy. It sets to picas and has micrometer adjustments to a fraction of a point. It continues from the regular 73-Pica Gauge, and the operation is identical.

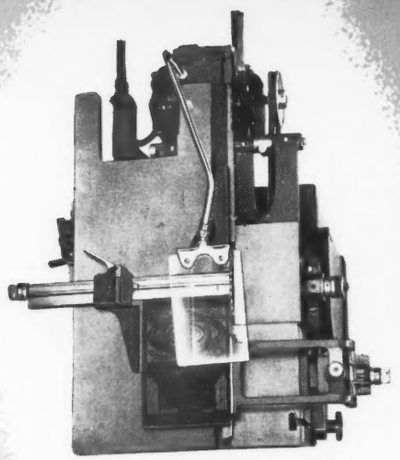
Unique arrangement provides for 135-Pica Extension Gauge to be a permanent part of the machine, yet allows for it to be out of the way when not in use. Operator never moves the extra weight of the Extension Gauge and it is not a cumbersome protrusion.



See-Through Guard

The See-Through Saw Guard is sold as an extra and is recommended for plants doing a substantial amount of plate work. For normal slug sawing the regular saw guard affords the operator complete protection from the moving saw. When sawing plates with the regular guard out of position the See-Through Guard protects the operator.

The See-Through Guard is easy to attach, can be pushed to one side when regular guard is in place, and has ample adjustment for positioning to proper angle. It is sturdily constructed and the glass is latest shatterproof type.



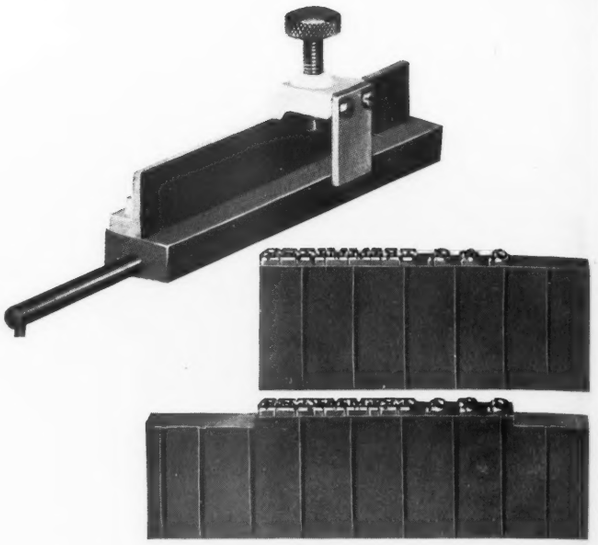
Low Slug Attachment

When short lines are cast on long slugs, there is a tendency for the quad end to print unless the shoulder is cut down.

The C&G Low Slug Attachment will position seven 10-point slugs at one time, whatever the indention length, and hold them for sawing. It is faster, safer, and more accurate than sawing single slugs, and the chance of cutting into the type matter is eliminated.

The illustration shows the Low Slug Attachment and a slug before and after sawing. The device fits the regular gauge bar channel. The operation is simple and easy.

The Low Slug Attachment is a time saver and should be available to every saw user. It fits outstanding C&G machines.

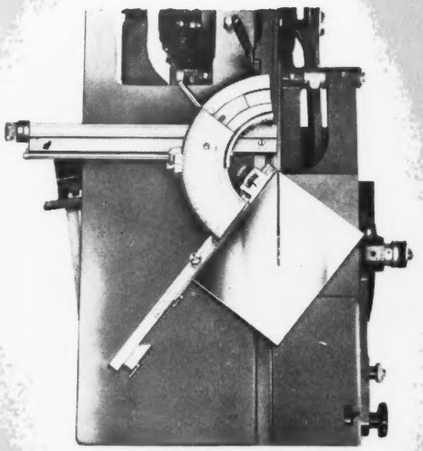


Improved C&G Angle Gauge

The improved C&G Angle Gauge facilitates the economical sawing of material for setting blocks of type matter at various angles, and for cutting rules and decorative blocks. (See page 7.)

Protractor markings on the Angle Gauge are graduated to cut angles from 2 to 90 degrees with positions indicated for cutting three, four, five, six and eight sided figures. Angles from five picas to 13 inches in length can be cut on strip material of any length up to 72 points thick. For cutting wood blocks or plates the Angle Gauge may be positioned at any point on the Gauge Bar with a definite stop provided for extreme right position. Angles may be predetermined on copy or plates with any flat protractor.

The illustration shows the Angle Gauge in position for cutting. It may be placed on or taken off the machine very quickly. It is held in position with a friction clamp. No screws are necessary.



Specifications

Size of Table.....30" x 18"
Height from floor.....37½"
Net weight.....387 lbs.
Shipping weight, domestic.....475 lbs.

Deluxe Equipment

73-Pica Gauge (adjustable to points) and Workholder . . . 135-Pica Extension Gauge (adjustable to points) . . . Miter and Lineup Gauge . . . Right and Left Hand Miter Vise . . . Saw Grinder with Dished Emery Wheel . . . Trimmer Grinder . . . Flat Emery Wheel and Guard . . . Universal Saw Blade Assembly with Head and Trimmers . . . No. 20 Waste Receptacle . . . Adjustable Lighting Fixture . . . screw driver . . . two wrenches . . . 1/3 H. P. Motor with Pulley . . . Belt and Cord for either 110 or 220 volt, A. C. or D. C. current.

Standard Equipment

73-Pica Gauge and Workholder . . . Emery Wheel and Guard . . . Standard Miter Gauge . . . Right and Left Hand Miter Vise . . . Standard 6" Saw Blade Assembly with Head and Trimmers . . . extra Standard Saw Blade (64 swaged teeth) . . . Adjustable Lighting Fixture . . . screw driver . . . two wrenches . . . 1/3 H. P. Motor with Pulley . . . Belt and Cord for either 110 or 220 volt, A. C. or D. C. current.

Ordering Instructions

The time-saving attachments described on the preceding pages should have careful consideration when ordering the machine.

In some instances they will greatly increase the capacity, with a consequent saving in time.

The Deluxe Equipment listed in the next column gives you maximum production. The Standard Equipment is essential, and will meet the requirements of many plants.

When ordering state the equipment that will serve you best, for you are investing in the most efficient sawing equipment that money will buy.

Be sure to list all items carefully and state voltage and kind of current used.

Our Guarantee

Every C&G product is performance-guaranteed, and you can place your order with an understanding that you have the privilege to return equipment within ten days should you find it in any way misrepresented by us, and any money paid on same will be refunded.

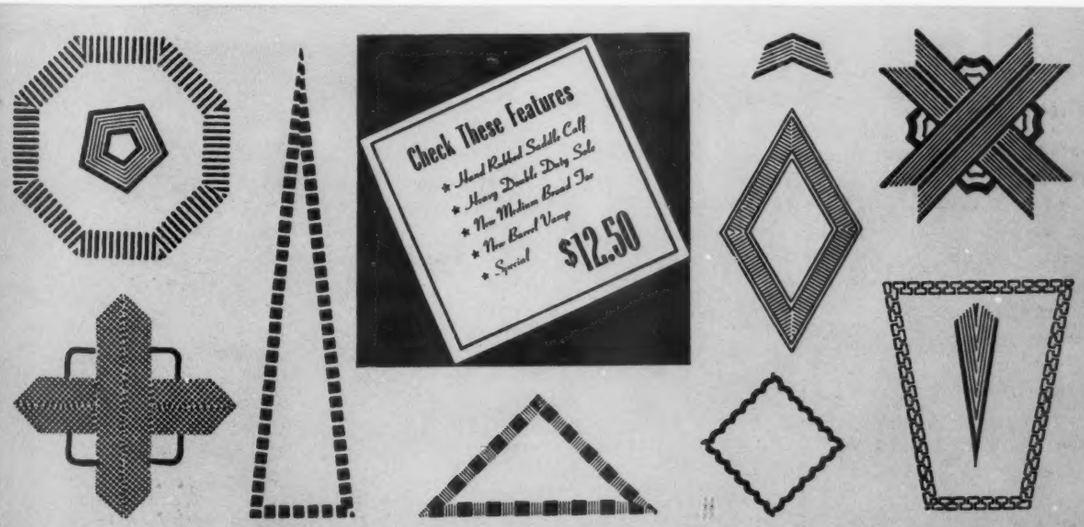
Decorative Units Produced with the C & G Angle Gauge

The C&G Angle Gauge is practical equipment for cutting unusual angles. It is easy to use, as angles may be predetermined by the use of a protractor.

Protractor markings on dial of Angle Gauge correspond with markings on protractor. Simply find the angle and set the gauge. (See page 6.)

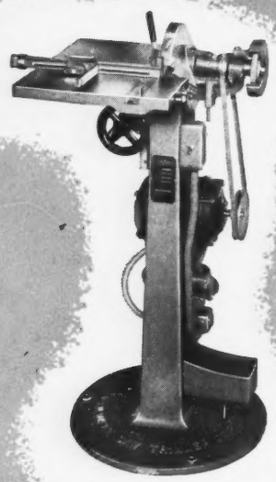
Hundreds of decorative designs may be cut from strip material. The sample units are illustrative of the wide range of rule combinations that may be made with the C&G Angle Gauge.

The C&G Angle Gauge is especially valuable in newspaper and typographic composing rooms for sawing angle wedges to block out angle boxes and type lines.



Other C&G COMPOSING ROOM EQUIPMENT

C&G No. 2 Saw Trimmer



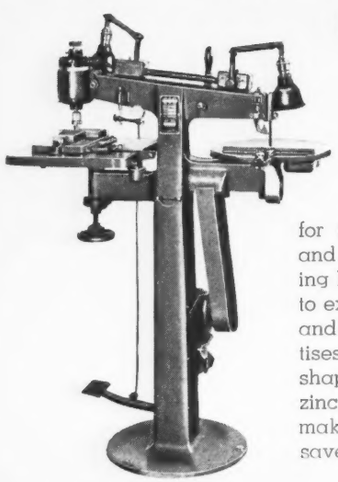
For accuracy and speedy sawing, trimming and mitering, the C&G No. 2 Saw Trimmer has proved its efficiency in many composing rooms. Easy sliding gauge, positive material vise, and adjustable point gauge, are important features, in addition to safety of operator at all times. It accommodates all regular sawing and trimming within its range. The table top is readily adjustable to any position for undercutting and outside mortising. Flexibility increased with special attachments.

C&G Sawliner

The Sawliner has a wide range with its large table and 72-pica Gauge. It is priced so that every shop can now afford a saw and to permit the purchase of several as auxiliary saws in the larger commercial plants and for use in ad alleys in the larger newspaper offices.

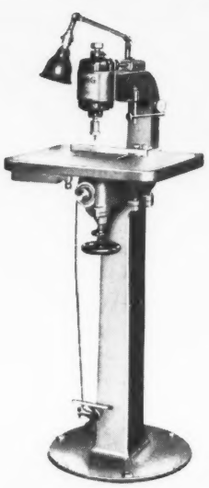
Engraving plants large and small can use the Sawliner to advantage. Special zinc blade can be furnished. The Sawliner can be purchased as a bench machine or cabinet model, also portable with solid rubber wheels and caster. Illustration shows cabinet model.

C&G Router, Jigsaw and Type High Machine



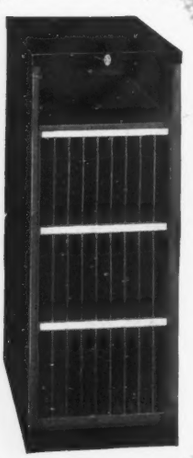
The C&G Router, Jigsaw and Type High Machine can be used by two operators at the same time. It eliminates the need for sending plates out for mortising, patching, or routing, and solves the problem of changing key numbers. It also planes cuts to exact type-height, routs and drills, and makes inside or outside mortises. It accurately cuts unusual shapes, circles and ovals from flat zinc, electrotypes, or tint blocks. It makes tedious operations easy, and saves its cost in time saved.

C&G Router and Type High Machine



The C&G Router and Type High Machine planes cuts to accurate printing height, routes and drills. It is useful in making special tint blocks, circles, ovals, and unusual shapes, to the extent of the artistic ability of the operator. It is easy to operate, and well constructed. All parts are of the finest material, assembled for the best in performance, with minimum operating cost. The cost of the C&G Router and Type High Machine makes its installation a good investment even in small plants.

C&G Strip Material Cabinet



Every printer can use the C&G Strip Material Cabinet to advantage, and it is ideal along side the saw trimmer. It speeds production by keeping strip material where it belongs. It is built of heavy sheet steel, and is 34" high, 24½" long and 13" wide. It holds over 2000 pounds of metal and can be used in any printing plant. The top makes a convenient work bench. The opening at the top can be used for tools, or additional strip and base material.

No. 20

No. 21

C&G Waste Receptacles

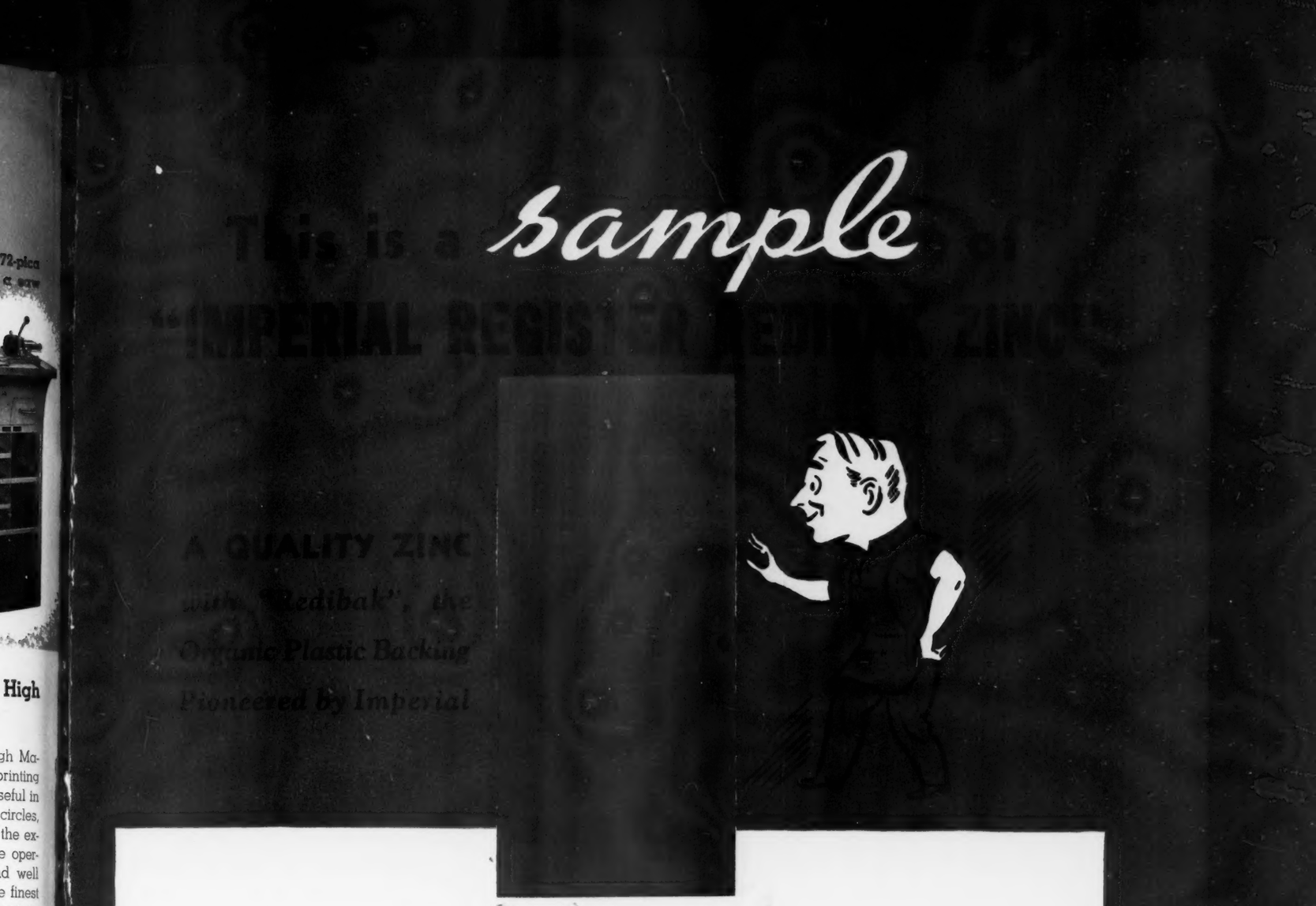
The C&G No. 20 Waste Receptacle is made of heavy sheet steel, and has a capacity of 1467 cubic inches. It is 16" high, 16" long and 11" wide. The handle swivels to a height of 26". The C&G No. 21 Waste Receptacle is made of the same material as the No. 20. The capacity is 2000 cubic inches, and it is 14" high, 19" long and 13½" wide. Back wall from which handle projects is 16" high, and the handle swivels to a height of 26". The No. 20 is regular equipment with the C&G No. 3-A Deluxe Saw Trimmer.

Descriptive Literature Furnished upon Request

MILWAUKEE SAW TRIMMER CORPORATION

610-612 EAST CLYBOURN STREET • • **MILWAUKEE, WISCONSIN**

Printed in U.S.A.



"REGISTER REDIBAK" HAS UNIVERSAL ACCEPTANCE FOR BETTER NEWSPAPER WORK

Take out this sample of Imperial Register "Redibak" Zinc and examine it closely. This is the zinc that has been selected by many of the leading dailies of the United States as outstanding for newspaper work, because it answers their requirements for a zinc with greater etching speed and more accuracy, especially in color work. Because "Register Redibak" is a close-grained zinc alloy, it etches fast and deep, with clean bottoms. It can be used for every zinc requirement in newspaper engraving. There is no longer any necessity for stocking grades of varying degrees of hardness.

"Register Redibak" has another tremendous advantage, in that all of the objectionable stretch is removed during manufacture. Color plates made from this zinc give closer and better register. This eliminates guesswork and make-overs, giving color registration that is completely satisfactory to advertisers.

If you have never used "Register Redibak," we suggest that you try it the next time you order zinc. Test its many advantages. You will be more than pleased with its economy. And don't forget to send your zinc scrap to Imperial in exchange for "Register Redibak." Ask us about the convenient Imperial zinc scrap containers — another feature pioneered by Imperial.

and this is **REDIBAK**

TAKE IT OUT AND EXAMINE IT

Remove this sample of Imperial Register Zinc with its blue "Redibak" acid-resist. Examine this plastic coating carefully. Note its blue color and how smoothly and carefully it is applied to the zinc.

After painstaking tests and laboratory analyses, Imperial pioneered this ready-to-use plastic backing. It's another exclusive Imperial contribution to the Graphic Arts industry. Yes, and it's the only blue backing coat on the market.

"Redibak" eliminates all the mess, dirt, and fumes met with in applying your own acid-resist. Using "Register Redibak" you do away with all inflammable materials that are fire hazards. Using "Register Redibak" you have better working conditions in the etching room. Your etching powder also will stay cleaner—"Redibak" will not flake off in your powder.

Why bother with applying your own backing? You can get Imperial Register "Redibak" zinc ready-to-use. Please remember that all Imperial Register Zinc has "Redibak" acid-resist. Send your order in today. Or exchange your zinc scrap with us for this factory-coated zinc. We will gladly furnish containers for your scrap.

Imperial

IMPERIAL TYPE METAL COMPANY

PHILADELPHIA CHICAGO NEW YORK

SAMPLE OF

VENT-A-FLEX

BACKING FELT

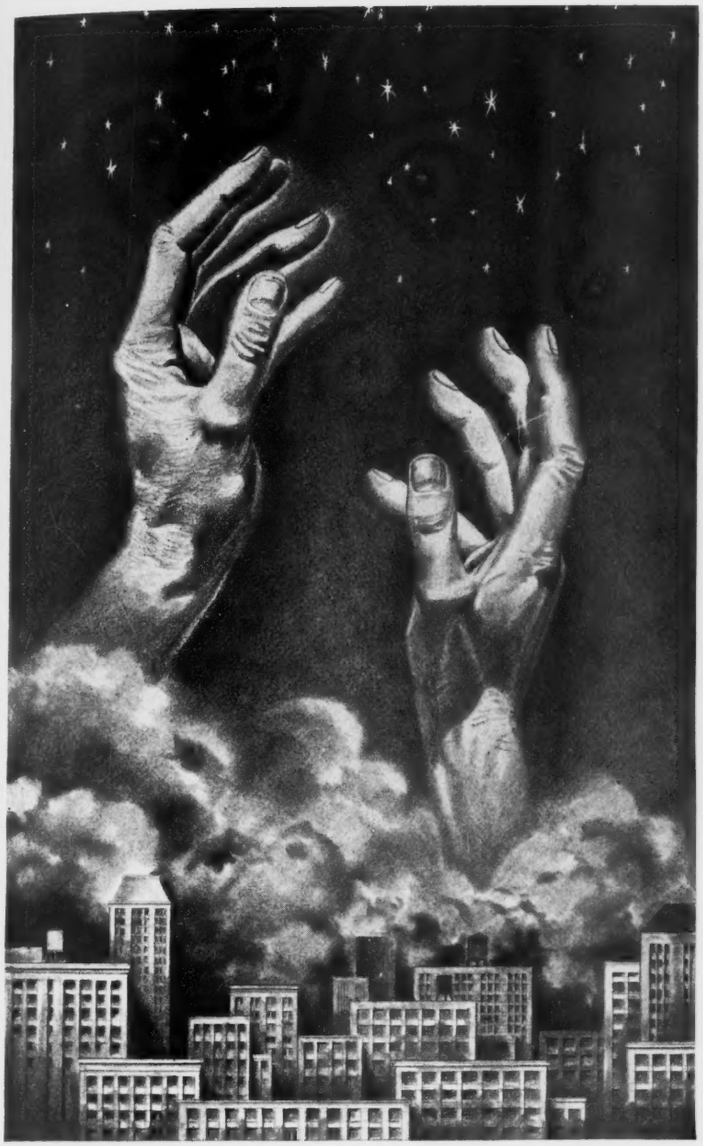
SOLD BY

AMERICAN PUBLISHERS SUPPLY

41 STEWART ST., LYNN, MASSACHUSETTS

SEE PAGE 24

THERE WILL BE A SOLUTION



Today finds our peacetime industries devoting either part or full time to war production. No longer is the theme "Business as usual"; instead it's "Unusual business"—presenting problems of raw materials, synthetic alternates, labor, machines and stepped-up production.

Perseverance reigns supreme among the laboratory technicians and engineers here at Ideal, where definite progress is being registered daily, improving existing roller compositions and developing new materials to serve the graphic arts industry during these critical days of priorities and curtailments.

We are constantly working to prove worthy of the faith and confidence our customers hold for our ability to solve and unravel knotty problems.

It is however both patriotic and judicious to conserve and prevent waste wherever possible. A frequent check-up on your present equipment might be the means of preventing shut-downs or costly replacements. Let us unite in working out our problems.

—Even though you're reaching for the Stars!

Write for full information on the proper care of your rollers to prolong their life. This information is yours for the asking and is but one of many services we are rendering.

IDEAL ROLLER & MANUFACTURING COMPANY

CHICAGO, ILLINOIS *Branch offices in principal cities* LONG ISLAND CITY, NEW YORK

BUSINESS IS NOT AS USUAL

WE wish business were as usual. That would mean the end of the war. But since we *are* at war, business is not as usual — each of us must do his part in helping to win.

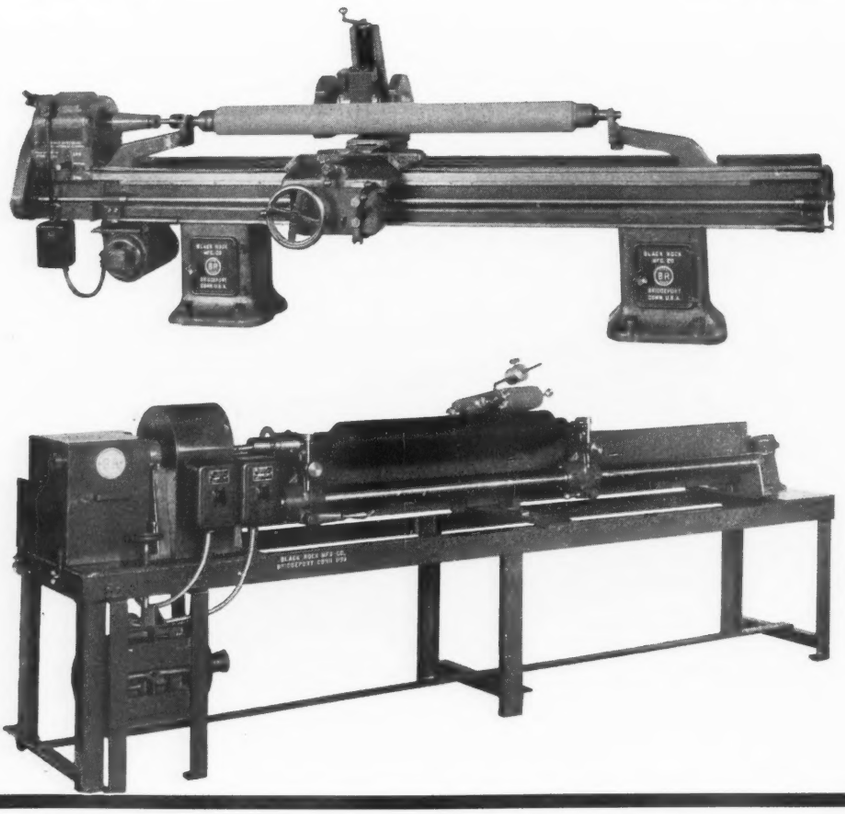
The Black Rock Manufacturing Company is fully occupied with war production. This means that no Black Rock polishing or grinding equipment is being manufactured, except on priority rated orders — even production of repair parts for these machines has become difficult. Notwithstanding, we will do our utmost to keep any existing Black Rock equipment operating efficiently for the entire duration. If your request for service is delayed somewhat, we ask you to be patient. If, at any time, you have any inquiries or questions as to how to get the most out of your present equipment, we will welcome a letter.

When the war is over, Black Rock will be back on the job immediately.

THE BLACK ROCK MFG. CO.

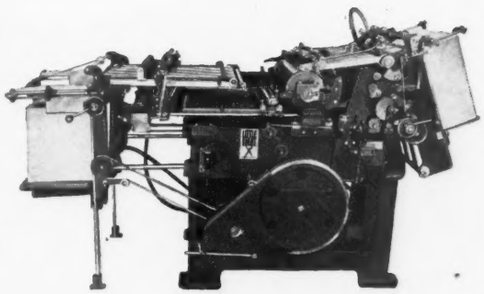
BRIDGEPORT, CONN.

NEW YORK LOS ANGELES



Meet Today's Demand for Printing

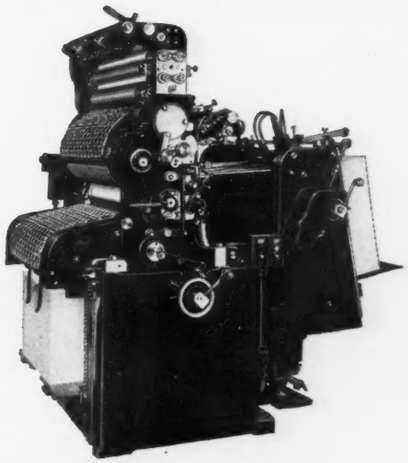
with...



ATF LITTLE GIANT

Automatic Job Cylinder Press

Smallest Sheet 3¼ x 5½ • Largest Sheet 12 x 18



ATF LITTLE CHIEF

Offset Press

Smallest Sheet 8 x 10 • Largest Sheet 14 x 20

Industrial plants everywhere are using millions of posters, booklets, forms, stickers, bulletins and promotion pieces in the War Production Drive effort. You don't have to use big, expensive equipment to print many of these jobs. Whether you have letterpress or offset . . . or both . . . the *ATF Little Giant Automatic Job Cylinder Press* and *Little Chief Offset Press are in step with war production.* Small, high speed presses that are inexpensive to run are being kept busy today when larger equipment is idle. Go after your share of today's printing! We have a few new presses ready for immediate delivery at your nearest ATF Branch Office or Dealer. These are available under the terms of WPB Order L-83 by filling out form PD1A. Your ATF salesman will show you how to make your PD1A request.

AMERICAN TYPE FOUNDERS

200 ELMORA AVENUE • ELIZABETH, NEW JERSEY

Types used: Stymie Family, Kaufmann Bold

For the duration •

A "Waster" is a Saboteur

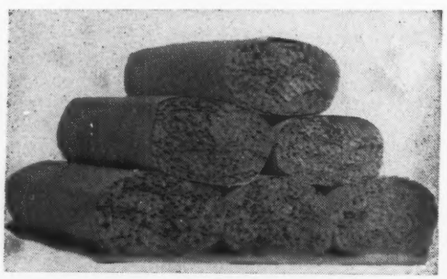
Buyers of Supplies Used in Any Production Must Consider Minimum Cost and Maximum Durability.

All "EASTERN" Products Meet this Acid Test.

★ ★ ★ ★ ★

"FLECTO"

Gummed Backing Felts



POROUS — to permit the quick and easy escape of steam, coated with glue that will not slip or leave the matrix under heat. Its adhesive will not crack, peel or crystallize under any climatic conditions. Made in gauges .021, .025, .030 and .035, in sheets 18" x 24". And in gauges .040, .045, .050 and .060 in sheets 18" x 22" — cut in strips without extra charge. Free samples on request.

"TRU MOLD"

Cork Molding Blankets

Better Molding with "Matched" Sets

A "matched" set is matched in weight and density. Uniform density throughout these blankets gives "Tru-Molding" over the entire surface of the form. "Matched" sets of blankets make it unnecessary to readjust molding pressure for individual blankets.

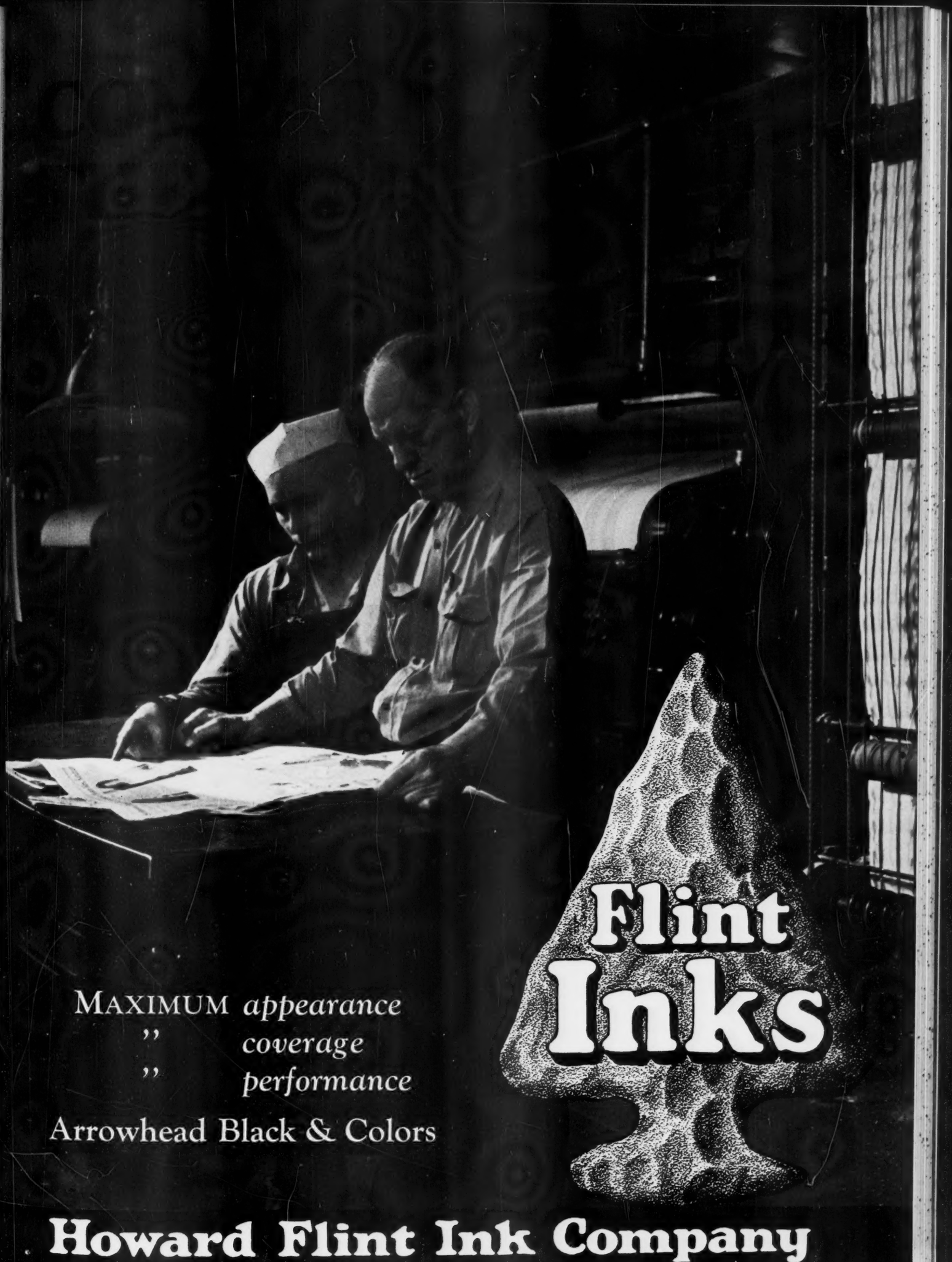
Order 2 or 100 — they will be matched in all their qualities. Each blanket has been scientifically tested and graded. We can furnish HARD & EXTRA HARD (Special) blankets that are matched in weight and density.

SUPERIOR Tail boards, .054 gauge for curved casting boxes; and .054, .035 and .025 gauges for flat casting boxes. ALSO: dry mat storage boxes, cork lined to retain moisture . . . Send for our general catalog covering all items.

★ ★ ★ ★ ★

EASTERN NEWSPAPER SUPPLY

9603 Northern Boulevard **Corona, New York**


Flint
Inks
MAXIMUM appearance
" coverage
" performance
Arrowhead Black & Colors
Howard Flint Ink Company
DETROIT · CHICAGO · HOUSTON · NEW ORLEANS · DENVER · ATLANTA · CLEVELAND · INDIANAPOLIS

DETROIT

10 out of 12

AGAIN, for the 10th time in 12 years, the Francis Wayland Ayer Cup has been awarded to a paper using Huber ink . . . the New York Times.

Honorable Mention, as well, has been awarded this year to these other papers using Huber inks:

- New York Herald Tribune, First Honorable Mention for papers of more than 50,000 circulation.
- Baltimore (Md.) Sun, Third Honorable Mention for papers of more than 50,000 circulation.
- Troy (N.Y.) Record, First Honorable Mention for papers of less than 10,000 circulation.
- PM (N.Y.) First Honorable Mention for tabloids.

To publishers striving for a better printed paper with which to attract readers and advertisers, there is real significance in the consistent preference for Huber inks shown by winners of the Ayer Awards.

Write to J. M. Huber, Inc., New York, Chicago, St. Louis, Boston.

HUBER INKS

HUBER PRODUCTS IN USE SINCE 1780

HUBER VELO COLD SET INK AND PRINTING PROCESS (REG. U. S. PAT. OFF.)

DETROIT · CHICAGO · HOUSTON · NEW ORLEANS · DENVER · ATLANTA · CLEVELAND · INDIANAPOLIS

SAVED PRODUCTION MINUTES WILL HELP WIN THE WAR

Under present conditions, mechanical and production executives must investigate every possible means for conserving production costs. Importantly, minutes saved from day to day will help win the war. Search out the little time-wasters as well as larger ones. Altogether, these savings are appreciable.

BOOTH'S ZINK CUT CEMENT is a "big" little production time-saver. Through its use, you can be assured that all advertising cuts will be placed as indicated in the layout. Eliminates the troubles you have had with lost or incorrectly positioned cuts. The tube in which this cement comes to you is designed to encourage the use of a minimum amount of cement in fastening all kinds of cuts to wood or metal base. Holds with the grip of a tiger's paw when used sparingly. It's the fastest and most economical cut-mounting method in existence.

BOOTH'S BLACK RUBBER ROLLS — No line-composing machine can be made to operate satisfactorily if any part is permitted to interfere with continuous operation. That's the way we feel about a clogged throat in the pot crucible, or an improperly adjusted distributor, or a keyboard supplied with out-of-round or hard rolls.

Booth's Black Rubber Rolls please the operator because of their long, resilient life. The machinist is pleased, too, because he is free to do work other than to satisfy the operator's complaints caused by defective rolls. The superintendent, likewise, is pleased because he gets production.

ZINK CUT CEMENT
Prices in the United States: 75c per large tube; $6.00 per dozen tubes; $5.00 per dozen tubes in gross lots.

RUBBER ROLLS
Trial pair, $1.45 including excise tax. By the dozen, $7.75 including excise tax.

THE E. A. BOOTH RUBBER COMPANY
364 ROCKEFELLER BUILDING • CLEVELAND, OHIO

USE RATING, PLEASE!

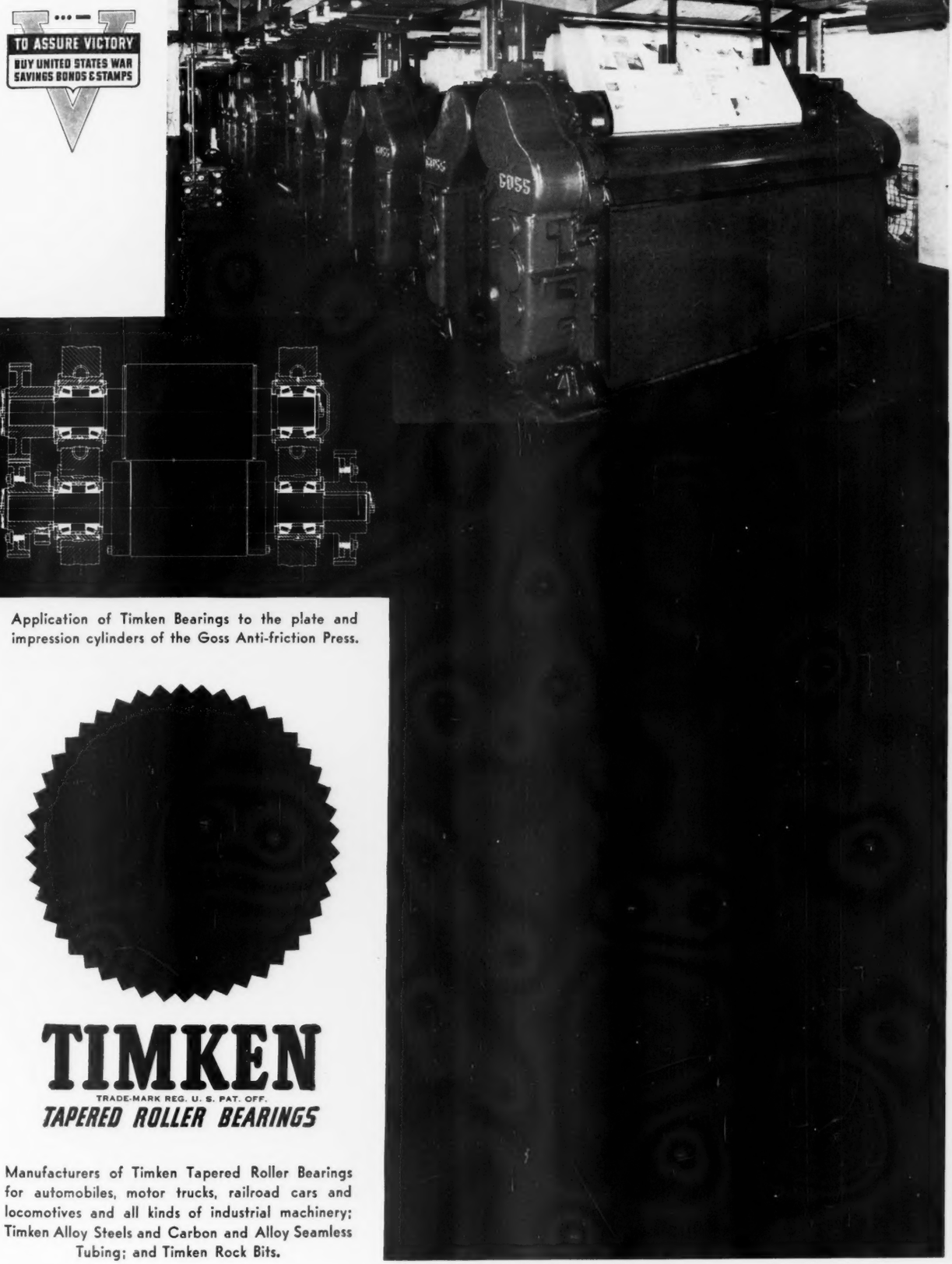
We suggest that your firm place on all purchase orders the properly endorsed statement provided in OPM's A-10 Rating Under Preference Rating Order P-100 for Repair, Maintenance and Operating Supplies.

Wood

NEWSPAPER MACHINERY

· · · where "V" goes double · · ·

These days, Wood stands for "V"— *twice over!* .... Wood *manufacturing* skill concentrates on basic machine tools, and other vital material — to create the WhereWithall FOR Victory. .... Wood *engineering* service concentrates on *maintaining* existing newspaper equipment — so that a free press may continue to inspire the Will TO Victory. .... Consultation is available without charge or obligation. .... Wood Newspaper Machinery Corporation, Plainfield, New Jersey. New York Office: 501 Fifth Avenue.



TO ASSURE VICTORY
BUY UNITED STATES WAR SAVINGS BONDS & STAMPS

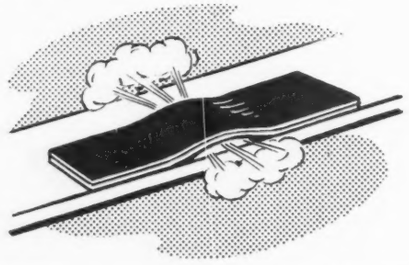
Application of Timken Bearings to the plate and impression cylinders of the Goss Anti-friction Press.

TIMKEN
TRADE-MARK REG. U. S. PAT. OFF.
TAPERED ROLLER BEARINGS

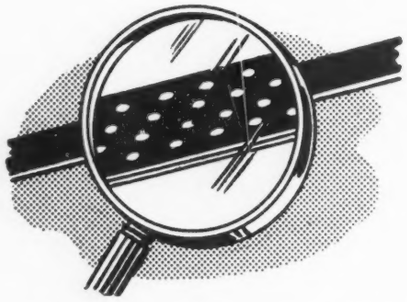
Manufacturers of Timken Tapered Roller Bearings for automobiles, motor trucks, railroad cars and locomotives and all kinds of industrial machinery; Timken Alloy Steels and Carbon and Alloy Seamless Tubing; and Timken Rock Bits.

VENT-A-FLEX

The greatest improvement in matrix backing since the advent of pre-gummed felt.



When ordinary felt is heated the moisture on the adhesive generates steam which forces the felt to part at the bond and lift from the mat.



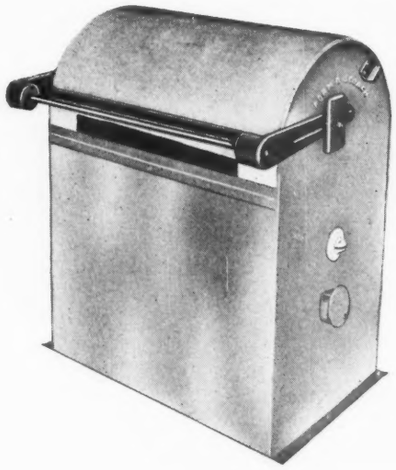
Magnified — Shows air vents which permit escape of steam and which expedite drying. Thru these perforations more glue is exposed to the air and the felt dries quickly and sets permanently.

IT TEARS EASILY at the holes to any length . . . like postage stamps . . . moistens quicker . . . is more flexible . . . forms with the mat . . . sets instantly . . . dries faster . . . shrinks with the mat . . . adheres permanently . . . does not skid.

Write for Samples

FORM-O-SCORCH

General Limitation Order L-83 does not prohibit immediate sale of this model.



NEW MODEL "E"

Self-Conforming Cover

Adjustable Tension on Cover

Adjustable Thermostatic Control

Direct Heat

AC-220 volts	**$150.00**
DC-220 volts	**$175.00**
Flat Models	**$120.00**

• • • •

NEW—DRY MAT STORAGE BOX

Similar to old except made of new materials with a lining of "LATEX" covered canvas. It is superior to old model.

Measures 7" x 23" x 27"
Holds 150 to 200 mats.

AMERICAN PUBLISHERS SUPPLY

17 STEWART STREET LYNN, MASS.

There's NO SECRET *About This*

You can have the best in ink, paper, and press work, but if your rollers are no good a fine job of printing is an impossibility.

That is the reason why so many pressmen watch their rollers so carefully. They make sure that they are the proper rollers for the season and have the distributing qualities that will insure maximum coverage with the minimum of ink.

Bingham Rollers are the first selection of most printers. Time-tested and tough, they help make less work for the pressman and more profit for the owner. They make it easier to print a good job.

Bingham Rollers are easy to get, too. There are sixteen Bingham factories ready to serve you with the type of roller most suited to your requirements.

SAM'L BINGHAM'S SON MFG. CO.

CHICAGO

Atlanta	Des Moines	Indianapolis	Minneapolis	Pittsburgh
Cleveland	Detroit	Kalamazoo	Nashville	St. Louis
Dallas	Houston	Kansas City	Oklahoma City	Springfield, O.

IT'S GREAT TO BE FIRST

AND TINGLE WITH SENSE OF VICTORY

• Days of straining for news interest, of inference and comment. . . . Then comes the thunderclap of earth-shaking, undeniable NEWS. . . . In an instant, publishing becomes an athletic contest, with every nerve strained, every corner cut, every second saved that can be saved.

• Publishing nerves tingle when this ordeal sends your own paper to every street corner minutes ahead of a rival. . . . From publisher down, there is a thrill of victory throughout office and plant. . . . Well-managed plants that rely on Certified Mats have every advantage that quick, flawless stereotyping can give them in cutting down the minutes and seconds between composing room and presses. . . . Easy molding, rapid scorching, a first cast as good as the best — a combination hard to beat when action is the watchword.

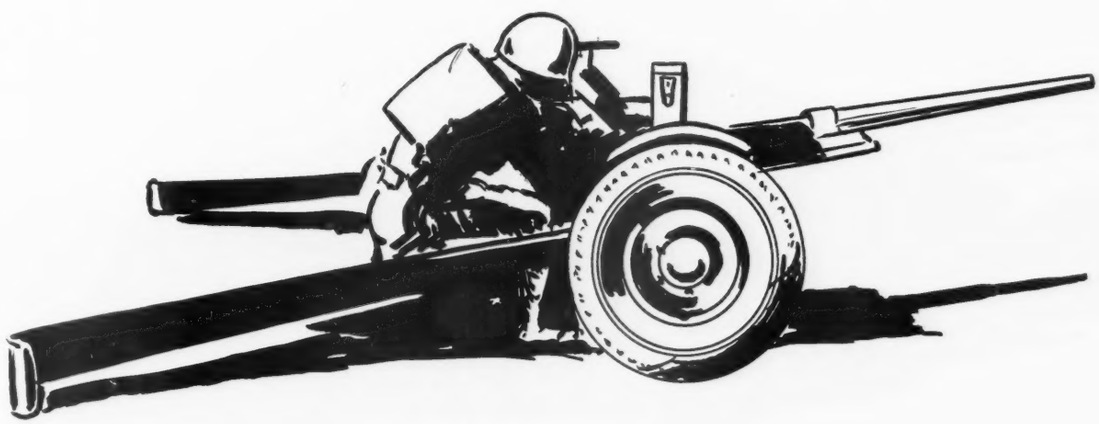
CERTIFIED DRY MAT CORPORATION

9 ROCKEFELLER PLAZA, DEPT. M, NEW YORK, N. Y.

Certified DRY MATS

ALL OUT
"VICTORY PRODUCTION"

is Being Maintained



Ordnance Materiel — Machine Tool Components

Weldments — Engineering Assistance

For The Army

THE DUPLEX PRINTING PRESS COMPANY

BATTLE CREEK, MICHIGAN

NEWSPAPER PRESS MANUFACTURERS SINCE 1884

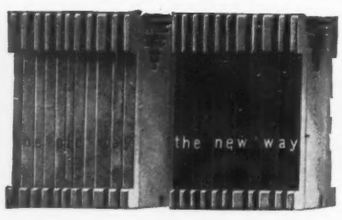
Testing the visibility of the reference marks on Linotype and Intertype matrices, by means of the Luckiesh-Moss Visibility Meter. Black & White processed reference marks show a visibility equivalent to that of 9½-point type, as compared with 3 point for used non-processed reference marks.

EYESIGHT CONSERVATION PAYS BIG DIVIDENDS

YES, conservation of eyesight in the composing room is good business as well as good ethics. It helps to keep costs under control, and it makes for a smooth-running plant — particularly at edition time, when you need your operators' best efforts.

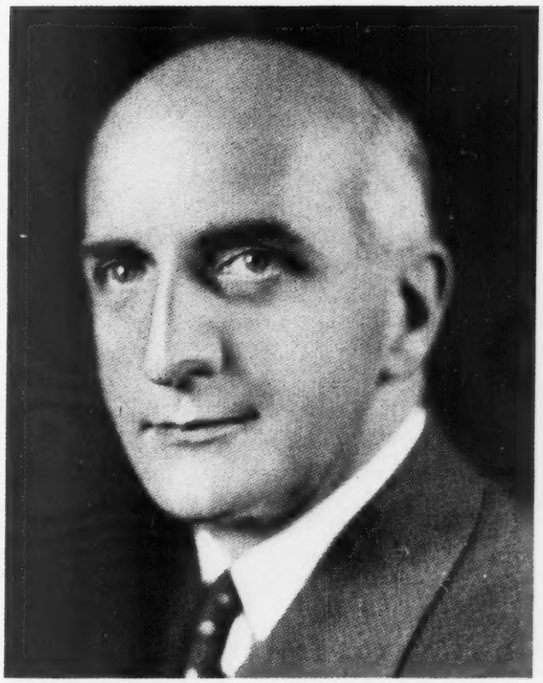
CONTRAST reference marks on Linotype and Intertype matrices are a great help toward eyesight conservation, as any user of Matrix Contrast Service will tell you. It helps the operator to bat out more work, with cleaner proofs. It reduces errors in railroaded news, and it stops many troublesome errors in ad composition.

WRITE for printed matter about Matrix Contrast Service



MATRIX CONTRAST CORPORATION
Sole Licensees of the Percy L. Hill Matrix Contrast Patents Nos. 1,466,437 and 1,796,023
EMPIRE STATE BUILDING, NEW YORK
European Agents: Funditor, Ltd., 3, Woodbridge Street, Clerkenwell Green, London, E. C. 1

Black & White
MATRIX CONTRAST SERVICE



Assistant Chief E. W. Palmer, Printing and Publishing Branch, War Production Board, addresses A.N.P.A. Mechanical Conference on Materials Problems Affecting Newspapers Under the War Program.

ANPA *Mechanical Conference* *expected to be extremely informative regarding newspaper production under war-time conditions*

BECAUSE of the cancellation of many of the regional newspaper mechanical conferences, this year's A.N.P.A. Mechanical Conference takes on more importance than ever. Because of the central location of Chicago, attendance at the Conference should be excellent. These observations, however, are not intended to minimize the importance of those regional conferences which have been and will be held this year. In the present emergency, we believe mechanical conferences, regional and national, more than ever are essential activities. Through them mechanical executives more readily grasp what is expected of them in helping to win the war.

Producing a newspaper under wartime conditions will be the major theme of the A.N.P.A. Mechanical Conference to be held at the Drake Hotel, Chicago on June 8, 9 and 10. With the exception of two stated speakers, the entire program is devoted to discussions of production problems by newspaper mechanical executives and representatives of equipment and supplies companies.

The forum style of meeting has been adopted again for this year's meeting inasmuch as it clicked at last year's Buffalo conference. This type of session seems to have overcome reticence upon the part of many executives in speaking from the floor.

Out of the experiences of previous mechanical conference meetings, the mechanical committee has arranged the program structure to make it easy for member executives to participate informally in the program discussions and also to insure that each session will start on scheduled time.

No stated subjects have been assigned in the program printed below, but questions for discussion will be collected from the floor and will be passed to each chairman who will announce them during the meeting. The chairman will assign one

or more executives on the platform to answer each question, after which they may be discussed from the floor.

An innovation which will be followed this year consists of opening each stated session when 25 or more executive members have assembled. In this way, each session will be started on scheduled time.

As has been announced previously, there will be no equipment nor supplies exhibition booths. This decision was made to conform to the wishes of the majority of usual exhibitors.

The principal conference speaker will be Assistant Chief E. W. Palmer of the Printing and Publishing Branch of the War Production Board. His subject will be *Materials Problems Affecting Newspapers Under the War Program*. Considering Mr. Palmer's long practical experience in the printing and publishing industry plus his position as spokesman for the Printing and Publishing Branch, mechanical executives may expect to have information presented which will enable them to conduct their production departments in fullest accord with WPB rulings and regulations.

Considering present war-time conditions, the address of Mechanical Superintendent A. H. Burns of the New York *Herald Tribune*, should be of extreme interest. The speaker's reputation for thorough analysis of any subject he undertakes to investigate is well known. His talk, therefore, should be invaluable to executives working in vulnerable areas.

MONDAY, June 8—10 A.M.—BALLROOM

OPENING SESSION

John W. Park, Chicago *Tribune*, Chairman

Materials Problems Affecting Newspapers Under the War Program
E. W. Palmer, Assistant Chief, Printing & Publishing Branch, War Production Board

Suggestions on Air Raid Protection
A. H. Burns, Mechanical Superintendent, New York *Herald Tribune*

MONDAY, June 8—2 P.M—BALLROOM

COMPOSING ROOM FORUM

John A. Burke, Production Manager, Gannett Newspapers, Chairman

Edwin H. Evers, St. Louis *Globe-Democrat*
B. F. Garrity, Hartford *Times*
C. Frank Mann, Louisville *Courier-Journal*
E. S. Nagel, Champaign (Ill.) *News-Gazette*
M. F. Dingman, Cedar Rapids (Ia.) *Gazette*
Herman R. Freund, Intertype Corporation
Carl G. Myers, Mergenthaler Linotype Co.
George H. Hanson, Lanston Monotype Machine Co.

MONDAY, June 8—8:15 P.M.—BALLROOM

MAILROOM FORUM

C. H. Ruth, Superintendent, Washington *Star*, Chairman

Joseph V. Madigan, Circulation Director, Cleveland *Plain Dealer*

J. Menard, Mailroom Superintendent, Des Moines *Register & Tribune*

Vern Hol, Mailroom Superintendent, Minneapolis *Star-Journal & Tribune*

TUESDAY, June 9—9:30 A.M.—BALLROOM

STEREOTYPE FORUM

A. H. Burns, Mechanical Superintendent, New York *Herald Tribune*, Chairman

Robert J. Longmore, Chicago *Tribune*
George H. Fuller, Cleveland *Press*
Richard M. Fitzgerald, Worcester *Telegram & Gazette*
Clark Means, Rock Island (Ill.) *Argus*
Harry Wrasse, Milwaukee *Journal*
E. A. Rehm, Wood Newspaper Machinery Corporation
C. S. Crafts, Goss Printing Press Co.
Karl Nibecker, Imperial Type Metal Co.
E. P. Lacure, Duplex Printing Press Co.

TUESDAY, June 9—2 P.M.—BALLROOM

PRESSROOM FORUM

John J. Shea, General Mechanical Superintendent, Hearst Newspapers, Chairman

Chas. W. Noonan, Providence (R.I.) *Journal*
Wm. A. Schoultheis, Cincinnati *Post*
George C. Stevens, Scranton (Pa.) *Times*
Frank Duncan, Portsmouth (O.) *Times*
Wm. L. Wispert, Fort Wayne *News-Sentinel*
H. H. Parker, Richmond (Ind.) *Palladium-Item*
George Scharton, Chicago *Herald-American*
C. S. Crafts, Goss Printing Press Co.
E. P. Lacure, Duplex Printing Press Co.
I. Tornberg, Wood Newspaper Machinery Corporation

TUESDAY, June 9—8:15 P.M.—BALLROOM

EDUCATIONAL ENTERTAINMENT

Metallizing Process for Repairing Worn Parts
Metallizing Company of America

Type Character (Sound Slide Film)
Mergenthaler Linotype Co.

WEDNESDAY, June 10—9:30 A.M.—BALLROOM

ENGRAVING FORUM

M. A. Hagan, Engraving Superintendent, Philadelphia *Inquirer*, Chairman

Infra-red Photography
W. W. Campbell, Eastman Kodak Co.

E. O. Aslinger, Greensboro (N.C.) *News*
Bernard Holliday, Art Director, Chicago *News*
Al Madsen, Photographer, Chicago *Tribune*
Lewis S. Somers, Imperial Type Metal Co.
D. C. Donaldson, Eastman Kodak Co.
Jack Kelt, Mallinckrodt Chemical Works
W. W. Warfel, Chemco Photoproducts Co.

Note: The Mechanical Committee believes that more photographers and artists should attend the Mechanical Conferences. A cordial invitation is extended to them to attend the Conference this year.

WEDNESDAY, June 10—2 P.M.—BALLROOM

COLOR, ROTO, AND ADVERTISING FORUM

F. H. Keefe, Publisher, Newburgh-Beacon *News*, Chairman

Harold Schmiedrich, Chicago *Tribune*
Louis J. Gilg, Milwaukee *Journal*
Martin Tiernan, Art Gravure Corporation of Ohio
Merle Rathburn, Advertising Department, Marshall Field & Co.
T. J. Carnese, Ted Bates, Inc., New York, N. Y.
E. Thomas McBreen, J. Walter Thompson Co., Chicago

Many Suggestions for conserving production time, equipment and supplies and maintenance operations made by Mechanical Consultant Leon A. Link of WPB's Newspaper Section at Des Moines Iowa Newspaper Mechanical Conference—Elimination of waste is now major item in printing plant operation

ALL of you men here have been conservation conscious for a long time, because it has been a part of your job to eliminate waste wherever and whenever possible. To many people working under you this has seemed beneficial only to the owners of the plant and we have not always been able to get everyone in sympathy with the idea of eliminating waste. Today it still means a saving to the owners, but it also means something more important than that. Your sons need this material, converted into different forms of armament, to fight for their lives and to win this war. They are fighting for us. It is a part of your job to impress upon every man, in your different departments, the absolute necessity of making every possible saving of material and equipment so that we can equip these boys adequately.

Numerous newspaper plants have excess floor space. This space might be used for placing machines to make small parts needed for war equipment. Sufficient power lines are likely available in these buildings and they are heated, lighted and ready for use. There may be factories in your city engaged in war work that could make good use of this space, it if is made available.

Many newspaper plants, especially the larger ones, have equipment in their machine shops that might be used part time at least for making cams, rollers or many other small parts. You now make many such parts for your own use. This work would not be secured through direct Government contracts, but there might be factories in your own city that have bottle-necks on just the parts you could supply. Within the past few weeks several newspaper plants have secured just this kind of work and it is a worthwhile undertaking. So it can be done. I might mention here that it has come to our attention that several commercial printing plants are also engaged in this same kind of work.

Because of war regulations, nearly every newspaper in the country has experienced a reduction in the amount of advertising run. Smaller papers, with less people employed, has been the result. Conditions indicate still further reductions. Maybe some of your excess labor, the mechanically skilled, might be employed at this work. If that arrangement could be made it would be a contribution by both management and employee to the cause. Probably it would be a personal benefit to everyone involved.

Savings in the Pressroom

Our pressrooms present an opportunity for great savings. Paper, rollers, blankets, cutting rubbers, inks, rags and oil all vital to our needs. A saving of paper is important because it requires pulp and power to make paper and railroad cars to get it to the newspaper. Pulp is used in munitions and there is a great need for the power available in the sections of the country where the mills are located. The transportation problem may get very acute. Additional paper waste is caused many times because of complicated angle-bar runs. Point out this fact to the management and maybe something can be done to eliminate much of this practice.

You have read so much regarding the shortage of rubber that it seems hardly necessary to mention it. I just want to say, however, that careful regrinding of rollers is absolutely necessary. Make sure that excess rubber is not being taken off and keep your extra rollers in boxes or cases where they will not be exposed to dirt or excess heat. Ink contains oil and you know it requires oil to operate our fighting machines. The amount of material available to the manufacturers of colored inks have been reduced 30% by order of the War Production Board. Some of the syndicates have reduced the amount of backgrounds in comics and are using screens where solids were formerly used to conserve colored inks. Press blankets contain cork, rubber, felt and other materials which are much needed by our armed forces. You men in the press rooms know that proper care has much to do with the length of time blankets can be used. Maybe you will decide to run them a little longer than you would under ordinary conditions.

Engraving Department Conservation

Engraving departments can also play a very important part in conservation, because all materials used by engravers are vital to our war needs. Careful stripping of negatives on flats to make sure all space is covered will do much to conserve zinc. Some newspapers are using both sides of zinc. Practically every chemical used in making cuts is also used in making munitions. The celluloid used for masking is getting scarce. Methods

EDITOR'S NOTE:

WE are printing here abstract of address delivered before the May Iowa Newspaper Mechanical Conference by Mechanical Consultant Leon A. Link, of the Newspaper Section, War Production Board. So many of the suggestions are applicable to commercial printing plant production during war operation that we feel it would be a good idea for commercial plant executives to read this abstract of Mr. Link's talk.

A.N.P.A. Mechanical Committee Personnel 1942

Walter E. Wines, Manager, A. N. P. A. Mechanical Department, 370 Lexington Avenue, New York, N. Y.
John W. Park, Chairman of the Mechanical Committee, Production Manager, Chicago *Tribune*.
John A. Burke, Production Manager, Gannett Newspapers, Inc., Rochester, N. Y.
Arthur H. Burns, Mechanical Supt., New York *Herald Tribune*.
George Geist, Photo-engraving Supt., Cincinnati *Times-Star*.
Leslie J. Griner, Mechanical Supt., Youngstown (O.) *Vindicator*.
Maurice A. Hagan, Photo-engraving Supt., Philadelphia *Inquirer*.
Fred H. Keefe, Publisher, Newburgh-Beacon (N. Y.) *News*.
Donald P. Miller, Allentown (Pa.) *Call-Chronicle*.
Russell B. Miller, Mechanical Supt., Bloomington (Ill.) *Pantagraph*.
Walter Ogden, Pressroom Supt., Cleveland *Press*
John J. Shea, General Mechanical Supt., Hearst Newspapers, New York, N. Y.
Lester Yeager, Production Manager, Indianapolis (Ind.) *Star*.

Comments Upon

L-83 Machinery Freezing Order

ON Monday, May 25, at the Des Moines Conference of the Iowa Newspaper Mechanical Conference, Mechanical Consultant Leon A. Link who is with the Newspaper Section, Printing and Publishing Branch, War Production Board, addressed the conference on *Newspaper Production in Wartime*. An abstract of his address appears in the adjacent pages. Printed immediately below are Mr. Link's comments upon WPB'S Industrial Machinery Limitation Order L-83 as amended and released on May 18. These comments are as follows:

I THINK I should say something about the recently amended machinery freeze order which now applies to 17 different industries. It seems there has been some confusion regarding the application of this order to newspaper machinery. A release by the War Production Board dated May 18th, pertaining to the amendments to Industrial Machinery Limitation Order L-83, contains the following:

"While retaining rigid control over acceptance of orders and deliveries by manufacturers, distributors and all other persons of new, used and reconditioned machinery, the amended order permits production of new machinery for stock without authorization."

I want to point out to you that while the amended order permits production of machinery, it does not provide for supplying the material for making this machinery and it does not guarantee approval of orders after the machinery is completed. Manufacturers who continue the production of new machinery run the chance of having it tied up for a considerable length of time.

The original order froze all second hand machinery. The amended order permits the sale of a machine or machines over five years of age without clearance from the War Production Board. It also lists eleven other specific types of exempted transactions, most of them dealing with transfers of used or reconditioned machinery, where inequity or hardship would otherwise result. The exemptions include seizures upon default under conditional sales, transfers in bankruptcy, mergers, leases of plant, shipments for repair, trade-ins, etc. Sales at auction, sheriff's sales and tax sales in liquidation proceedings are restricted unless they are made to a dealer, who is covered by the order.

The above are all covered in detail in paragraph B of the order.

The first section of paragraph B of the order is as follows:

"Except as provided in paragraph B (4) hereof, no person shall accept any order for critical industrial machinery in fulfillment of any order, whether accepted or not, unless such order is an approved order. No person shall accept delivery of any Critical Industrial Machinery except pursuant to an approved order."

You will note that not only the seller, but also the purchaser of machinery is also guilty if he accepts delivery of new machinery or used machinery less than five years old. Persons found guilty of violating the order can be punished by a fine or imprisonment. Violaters may also be prohibited from further application of priority for securing materials for manufacture and the buyer may be prohibited from purchasing machinery.

You may purchase new machinery valued up to $200.00 or used machinery more than five years old without approval of the War Production Board.

You may purchase repair or maintenance supplies up to $1,000.00 for any machine without approval during any four week period. You can purchase repair and maintenance supplies in excess of $1,000.00 without approval when, and only when there has been an actual breakdown or suspension of operations because of damage, wear and tear, destruction or failure of parts, or the like, and the essential repair or maintenance parts are not otherwise available.

If you wish to purchase repair and maintenance parts in excess of $1,000.00 for any one machine and the machine has not actually broken down, but is in serious need of the new replacement parts in order to insure operation, then it will be necessary for you to get the order approved by the War Production Board.

which will eliminate considerable masking have been or are being developed. In addition to the supplies, it is just as important that the tools used by engravers be given the best of care.

Jammed Liner Would Make Machine Gun Part

Practically every mechanical part and all of the supplies used in composing rooms is made of materials that enter into fighting equipment. Typesetting machine and typecasting machine matrices are made of brass and likewise practically every machine our fighting forces use contains brass. I want to say to you if there is not enough brass to supply both them and the newspapers, the newspapers will be the ones that will have to get along without it. What is true regarding brass is true of every other part and all of the supplies entering into newspaper manufacture. When your typesetting machine operators jam a liner they have ruined a precision piece of equipment that contains enough highgrade steel and labor to manufacture a vital part for a machine gun.

The type metal used in your plant, as you know, contains lead, tin and antimony. There have been restrictions put on all these ingredients by the War Production Board. Overheating of metal causes loss of tin. So it is important that thermostats on your machines and remelt pots be checked regularly to make sure proper temperatures are being maintained. Of course, the same is true of metal used in the stereotype department.

An increasing number of newspapers have adopted rules which resulted in the elimination of much of the waste that was previously caused by frequent resetting of advertisements. This abuse has been reduced materially in several large cities where aggressive competition between newspapers exists. If there are those who still think this cannot be done, then I am sure some investigation might prove quite enlightening. Now is the time to get this straightened out.

As in the other departments, the men in the stereotype department are also working with machines and materials that are just as necessary for our fighting equipment. Saw blades, router bits and other tools made of high-grade materials are used. How long each piece will serve to a great extent, depends upon the care with which it is used. The mail rooms have the same responsibility as to the other mechanical departments.

Take Care of Motors

I want to emphasize the necessity of taking care of electrical equipment. We all know that considerable motor trouble can be eliminated if we will make regular periodical checks of all motors in the plant. Much motor trouble is caused by neglect. Regardless of what machine it is, or what department it is located in, a motor is necessary to provide power to operate the machine, whether it be a router in the stereotype department or a printing press in the basement. You must have motors and you are not going to be

(Continued on Page 68)

THREE-DIMENSIONAL SEEING

A new science of color and Lighting

By ROBERT A. MASSEY
of E. I. du Pont de Nemours & Co., Wilmington, Del.

EDITOR'S NOTE

WHAT is termed by its sponsors, Three-Dimensional Seeing should have important application to production in printing plants. It should be stated at the outset that investigational work on the subject has been conducted jointly by the E. I. du Pont de Nemours and Philadelphia Electric Companies. The research did not apply specifically to printing plant machinery but to machine tools. Yet the general principles of this new technique of improving vision through paint color contrast should be easily adaptable to printing plants with beneficial results. Although the idea was first announced only last fall, an estimated 15,000 machines in the nation's war production line have been clad in the prescribed "Three-Dimensional Seeing" colors. A mounting total of statistical data from production and safety engineers substantiate the claims that but a few months ago came out of the research laboratory.

Briefly, in the Three-Dimensional Seeing idea is incorporated a means for treating hand-operated machines with contrasting shades of paint so that the work will stand out in contrast to the tool at the "working point," thus lessening the danger of physical injury to the operator and resulting in more accurate machine operation and consequently in improved production.

We believe mechanical executives in the printing industry ought to give this idea some thought, especially in the larger plants where the human element is greatly multiplied over that in the smaller plant. Some of the possible applications of the Three-Dimensional Seeing idea to printing's production machinery could be extended to paper cutters of all kinds, matrix rolling machines, direct pressure presses, saws and mitering machines, bookbinding presses, and so on.

After numerous experiments with the entire range of colors possessing high reflection of light, it has been determined that a light buff color paint is best for the immediate working area, while the balance of the machine may be painted medium gray. The selection of the medium gray paint for coating the machine frame not immediately adjacent to the working point was influenced by the opinions of plant maintenance men that a machine painted entirely with the radical buff-color paint would be difficult to keep clean. As a compromise, the machines were painted a medium gray with light buff around the working area. Surprisingly, the combination seemed to perform better than any of the solid colors with which the first experiments had been conducted.[1]

Investigation of the idea in connection with production machinery used in the printing industry might disclose the necessity or desirability for employing colors at the working point other than the selected buff reported upon by Mr. Massey. For instance, in the case of a stereotype mat molding machine, the "work" *i. e.*, the mat itself may be yellow or pink in color when received from the manufacturer. Consequently, a varying and darker color for the "working point" would be advisable to obtain the seeing contrast. However, this and other questions probably will be determined later on by du Pont investigators.

After determining the value of Three-Dimensional Seeing as applied to production tools, the du Pont investigators gave their attention to the study of walls and ceilings to complement and if possible to augment the benefits obtained from the first experiments. It was felt that still further benefits could be secured through a complete color operation. Many printing plant executives realize fully the benefits obtainable from painted walls and ceilings plus efficient lighting but they do not realize that the matter does not end when walls and ceilings have been painted with a glaring coat of white paint. The discussion on obtaining proper reflectance factor from ceilings and walls and the use of white ceilings with tinted walls is interesting. We hope our readers will give further thought to the new element of Three-Dimensional Seeing introduced by Mr. Massey's accompanying article.

[1] *Improved Vision in Machine Tool Operations by Color Contrast*, by Arthur A. Brainerd and Matt. Denning.

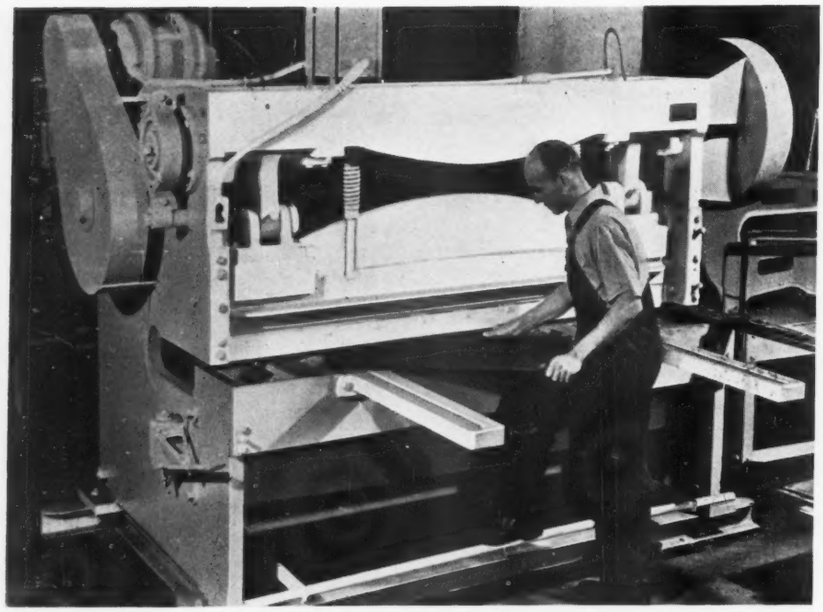
WHILE an enormous investment of time and money is made annually to create light in plants and factories, in many cases part of this expenditure is wasted. For all too often their valuable light is "blotted up" by dingy walls, ceilings, floors—and, more particularly, the machinery is so camouflaged in dull green, deep gray or black that it blends into a solid, dark mass. Even with modern lighting and well-painted walls and ceilings, drab-colored machinery "eats up" much of the light so expensively created. Contrasts are lacking; eyes strained; hands are slowed down. Danger spots are not emphasized and, in too many cases, those nimble hands are maimed.[2] Two basic elements are required to secure strainless, full vision—*color* and *light* in the right combination.

[2] In demonstrating how "danger points" of working machinery can be emphasized through the scientific use of colors, it is not intended that color be substituted for adequate guarding but rather that it be used to indicate hazardous locations. Mechanical guarding and personal protective equipment should, of course, be provided according to insurance regulations and individual state requirements.

Time Tests and Reactions

A series of time studies was conducted in the Philadelphia Electric shop to ascertain the effect of the various colors upon actual operating efficiency. For this purpose, a punch-press and a metal shears were painted. Tests were made under both mercury and incandescent light for each color. Light blue, aluminum, yellow, light gray, light green, buff and medium gray were the colors used. While the opinion was unanimous that all these colors made the operators' seeing task easier than the traditional gray, the preferred colors were all light in tone. The least desirable for use on the machinery under test proved to be green and yellow, although they are useful in other applications. Reactions of operators after a week's experience were then recorded and computed. The winning combination in these careful studies was *buff* for the working area and *medium gray* for the body of the machine—the same combination which, in controlled tests, proved to have the best reflecting qualities.

During the eight weeks of the tests, a psychological survey was conducted among fifteen operators to determine their personal reactions to the various colors being tested. The results were weighed with the other factors of color contrasts, light-reflective factors, and required operating time. By this thorough method, the three-dimensional colors scoring highest on all counts were *buff* and *medium gray*. It was found (1) that the soft contrasts created by this combination were easier on the eyes than abrupt changes in brightness; (2) that these colors were best in reflective qualities; (3) that operating time was faster and more efficient because lighter tool areas concentrated attention on the work and highlighted danger points; and (4) that workers reacted more favorably to the buff and gray combination than to the other colors tested. The chief feature of this color treatment is the three-dimensional effect secured by controlled color con-



Three-Dimensional Seeing has been a subject for investigation by the E. I. du Pont de Nemours Co. Briefly, the principle of Three-Dimensional Seeing is to paint the immediate "working point" of a machine with buff color paint, while the balance of the machine is coated with medium gray paint. The contrasting shades of paint serve to cause the work to stand out in contrast to the tool at the working point. This lessens the danger of physical injury to the operator and results in more accurate machine operation and consequently in improved production.

The du Pont Company has not yet investigated the printing field but enough data has been secured that it seems the principle of Three-Dimensional Seeing can be adopted for certain operations by the printing industry with profit. In this illustration, a metal shears in an Eastern general machine shop was painted as described in the article. Note how the Metal under fabrication stands out in contrast to the spotlighted danger area. Besides reducing the personal injury hazard and errors in workmanship, tests conducted by du Pont demonstrated that Three-Dimensional Seeing also reduces eye-strain and nerve fatigue.

trast. The work in machines so treated stands out clearly in stereoscopic sharpness that cannot be achieved by brightness contrast alone.

The two shades which, in this series of exhaustive tests, made possible this Three-Dimensional Seeing effect have been especially formulated by du Pont and have been designated as *Spotlight Buff* and *Horizon Gray*.

Improving Working Surroundings

After discovering the advantages of three-dimensional painting as applied to machinery, the du Pont technicians and the lighting experts turned their efforts to the study of walls and ceilings. It was felt that, for better seeing and working conditions, the color-treated machinery deserved proper surroundings; that still further benefits could be accrued for the employer, as well as employees, through a complete color operation.

As much care, study and time went into the subject of revamping the background with paint as had gone into individual machines. What colors would give the most pleasing, non-distracting effect and at the same time rob the least amount of light? This question was the primary concern of the color and light experts, who have been working on the entire Three-Dimensional Seeing survey since 1937.

Light-colored paint on traditional brick walls proved to be the best answer to this phase of the problem. It dispelled the monotonous gloom in the over-all picture created by most factory interiors and changed the atmosphere into a bright, cheerful one which makes for more satisfactory working conditions for employees. Light ceilings, as proved in numerous tests, decreased the "lost-light" problem so acute with dull, dingy ceilings, which ordinarily soak up light like a sponge absorbs water, and thus increased seeing ability of the workers.

When the two-toned machines were combined with light ceilings and side walls and a well-lighted working area, complete Three-Dimensional Seeing resulted.

Paints and Their Reflection Factors

Properly chosen paint for walls and ceilings not only helps conserve light but also reflects and diffuses it, eliminating objectionable sharp contrasts. Thus, the right paint is a most important partner of light. While requirements vary according to conditions in individual plants, ceilings should, as a general rule, reflect at least 75% of the light that strikes them in order to provide adequate lighting on the working plans. Often higher values are desirable. Painted walls directly in line with a worker's vision should have a light reflection factor of 50% to 60% to provide proper and restful lighting conditions for the operators' eyes. White ceilings and walls reflect a maximum of light. But, in some cases, light colors are preferred to white even at a sacrifice in lighting efficiency. Generally speaking, low-ceilinged areas give greater light diffusion when flat or eggshell finish is applied. But when factory ceilings are excessively high, a gloss white may be the best solution, particularly when such factors as dirt resistance and washability must often be considered. For these qualities, a glossy finish will give the best performance.

Reflection factors of various du Pont white and light-colored paints—determined by a comparison with the accepted magnesium carbonate standard which has a rating of 98%—show that White Eggshell Finish and the White Flat Wall Finish have higher ratings than any of the others. However, as pointed out previously, a glossy finish, while diffusing less light, has less tendency to collect dirt and can be more quickly and easily washed.

Advantages of Three-Dimensional Seeing

With this new scientific use of color and light, manufacturers benefit in four ways: (1) increased production; (2) reduced accident hazards; (3) more comfortable working surroundings for employees; and (4) improved labor relations.

Because Three-Dimensional Seeing insures fast, accurate vision, workers are able to perform their tasks far more quickly. Errors are cut to a minimum; flaws are quickly spotted; and increased production through more-efficient, higher-quality workmanship is a natural result.

When machinery is painted with the specially-formulated Spotlight Buff and Horizon Gray, the contrast between the machine proper and the danger area is more clearly defined. Under such ideal conditions, workers' eyes function quickly and accurately; their hands respond efficiently and accident hazards are automatically reduced.

The standard of working conditions has increased down through the years, but never have the comforts of employees been more important than today. With the scientific use of paint and light, drab factory interiors, rest rooms and other surroundings are made cheerful and radiant with comfort. Such thoughtful consideration on the part of progressive management is keenly appreciated by workers.

The provision of cheerful surroundings, easily possible with Three-Dimensional Seeing, has a definite and invaluable psychological effect on workers and goes far in promoting better labor relations. For the right combination of color and light creates an atmosphere of brightness and makes seeing easier—two great promoters of human contentment and satisfaction. Less eye-strain, greater safety, less nerve fatigue—all contribute greatly to the better morale of the worker.

"*Gravure isn't going to affect the commercial field because high-speed gravure is adaptable only to and for large production work, such as high circulation magazines, Sunday newspaper supplements, or millions of pamphlets and labels. The commercial printer should not worry about gravure unless he contemplates extremely large runs.*"
—Peter Dennerlein, Manufacturing Director, Crowell-Collier Pub. Co., in address before April Cleveland Craftsmen's Club.

GRAVURE *and its place in the printing field—Post-war suggestions for commercial printer**

**Report of address delivered by Peter J. Dennerlein, Manufacturing Director, Crowell-Collier Publishing Co., before April meeting of Cleveland Craftsmen's Club.*

THE premiere showing of the sound-color movie *New Wings for Publishing*, occurred at the April meeting of the Cleveland Club of Printing House Craftsmen. The picture was presented by Peter Dennerlein, Manufacturing Director of Crowell-Collier Publishing Company, Springfield, Ohio. Mr. Dennerlein was assisted by Craftsman A. T. Walker of the Harris-Seybold-Potter Company, of Cleveland, who operated the projector. The technique employed in presenting the gravure process is excellent. A rather fine explanation of the Dultgen process used by Crowell-Collier in its gravure plate-making operations is given. Cottrell and Goss color gravure presses are used in addition to many letter presses in producing *Collier's*, *The American Magazine* and *Woman's Home Companion*. Mr. Dennerlein explained that 60,000 twelve-page signatures per hour printed in color can be produced on the Goss gravure press shown in the picture.

Mr. Dennerlein's talk preliminary to the showing of the picture was devoted to the war and its effect upon the printing industry. He said the advertising that is being done at the present time, aside from food, clothing and cosmetics, principally is a gesture of good will by the manufacturer. The advertiser wants to preserve not only his name but his trade as well, and therefore is carrying on in a minor degree institutional or house advertising. In some instances, he is telling the story about what he is doing to help win the war in making tanks, shells, jeeps, airplanes, engines and other materials. It is a good story. The speaker stated he thinks the American public not only wants to know, but should know, for instance, what General Motors is doing in the war effort.

In the printing and publishing industries materials are limited. We have priorities on paper, lead, copper, nickel, steel, ink, wire, glue and even on wrapping paper. Mr. Dennerlein stated that these materials problems relatively were the same in the publishing field as in the commercial printing field. When asked what his firm was going to do about the limited availability of certain needed materials for producing publications during the war, Mr. Dennerlein stated: "We won't have much, but it will be sufficient because we won't need much." He doubted very much the availability of necessary materials if advertising were to be continued on the same scale as prevailed in 1940. Therefore, we must concentrate on winning the war.

Mr. Dennerlein predicted that after we have won the war the greatest boom this country has experienced will occur. He asked: "What are we going to do to prepare for that boom? Are we going to sit back and be disinterested in new machinery and new ways of doing things, or are we going to streamline the printing business as all other businesses have been streamlined? Are we going to put engineers to work thinking up new methods, new machinery, so that as soon as the war is over these new printing presses and other equipment will be available to us within six months—at which time we will need them badly?"

The speaker stated there has been much fear in our industry as to what is going to happen to letterpress and offset. Particularly, Mr. Dennerlein thinks, gravure isn't going to affect the commercial field because high-speed gravure is adaptable only to and for large production work, such as high circulation magazines, Sunday newspaper supplements, or millions of pamphlets and labels. The commercial printer should not worry about gravure unless he contemplates extremely large runs.

Gravure is not adaptable to most commercial job work for the reason that the same preparatory steps are necessary for the making of rotogravure cylinders from which to print as are necessary for original halftone plates for letterpress. If a customer wants reprints the holding of rotogravure cylinders is out of the question. You can hold original letterpress engravings but you cannot strip the shell from a cylinder and use the shell for reprints. When the shell is stripped from a cylinder its value as a printing medium is destroyed. Letterpress and offsetlith plates, on the other hand, can be held and used again.

Mr. Dennerlein advocated specialization for the future in the printing field. He suggested analyzing the specialized field in which a printer wishes to enter or upon which he wants to concentrate after the war. Then purchase specialized equipment for labels, catalogs, cartons, wrappers, letterheads and other work to be executed either in letterpress or offset. If you are a commercial printer, determine your field and don't hesitate as to the use of offset or letterpress. If, however, you are a publisher of large circulation newspaper supplements or magazines, or want to print large run jobs of labels or cartons, then consider gravure.

Mr. Dennerlein paid tribute to L. W. Claybourn for his precision idea in printing equipment and printing production. The gravure process is a precision process, but like letterpress and offset, the results achieved from the process are dependent upon the human element. If the human element were not subject to error then we would not need any printing process.

During the question period Mr. Dennerlein was asked why his firm now uses Type A inks instead of the Type C gravure inks used formerly. The Type C inks passed out of the picture because the solvents used in those inks are needed by Government to win the war. The Type A inks carry a petroleum solvent. He finds that these inks are more economical to use and a much better job with better color can be done.

Mechanical and Production Executives

can obtain an overall idea about the War Production Board's orders as they affect the entire printing industry by reading on page 2 the *Revised Explanations of WPB Orders Affecting the Printing Industry* by Chief George A. Renard, issued on May 9. It should be borne in mind that these WPB orders are subject to constant revision. Principal changes from last month are Machinery Limitation Order L-83 and paper comments. Note suggestions regarding inventories of obsolete plates in your plant, conservation of press cutting rubbers and gravure suggestions.

Front building elevation of San Jose (Calif). Mercury Herald which has a circulation of approx. 21,316 copies daily and 25,831 on Sunday. The building was adapted to newspaper plant use. Building formerly was used as a market place.

UNIQUE FEATURES *incorporated in new home of San Jose (Calif.)* Mercury Herald — *Business, editorial, advertising and mechanical departments on one floor without wall separation*

UNIQUE in newspaper publishing plant layout, the San Jose (Calif.) *Morning Mercury Herald* is now published from a transformed market building. One of the unique features of the new plant is a 4 ft. wide walk extending throughout the 277 ft. length of the building from the business offices, through most of the mechanical departments, to the paper storage room in the rear. Partitions or walls have been eliminated and the different offices and departments are divided by railings only. This provides an unobstructed view throughout the building. A visitor to the office, while standing at the counter in the front business office, can see the entire plant with the exception of the pressroom. Even the paper stock is visible from the front office.

The layout together with some other production features in the plant were devised by Mechanical Superintendent Floyd L. Steenrod.

Most employees of the *Mercury Herald* were of the opinion that the new partitionless layout would not be practical from a production standpoint because the confusion and noise would be terrific. There is noise, but it is a cooperative noise. In the old *Mercury Herald* plant production of the newspaper was scattered over three floors in two separate buildings. The copy boy who used to run through the rain with news stories and advertising copy for the composing room now walks down a short aisle. The editorial and mechanical departments which used to argue with each other by telephone can now talk across a railing.

The Building

The new home of the *Mercury Herald* is at 211 West Santa Clara street. The building was converted to newspaper use before the *Mercury Herald* moved into it. It is constructed of reinforced concrete and the roof is supported by steel girders at a height of 18 ft. from the floor. There is a further height of 12 ft. to the top of the saw-tooth roof. Natural ventilation is provided by a continuous line of sand-blasted windows.

Extending from the street for a distance of 125 ft., the building is 50 ft. wide. From that point for a distance of 152 ft. it is 95 ft. wide. The lot on which the building stands is 370 ft. long extending from Santa Clara to Carlysle Sts. The remainder of the lot provides a paved parking and loading space 93 ft. by 95 ft.

The inside walls are painted a creamy white to prevent glare and are finished at the bottom with a 5 ft. dado of seal brown color. Counters and equipment are painted to match the dado.

As has been mentioned above, there is a 4 ft. walk along the wall from the front of the building to the rear. Entrance to the departments is from this walk. Departments are designated by small neon signs. The business office, editorial department, composing room and the library are lighted with fluorescent lamps.

The engraving department, in charge of Frank W. Hadley, and a conference room, are located on the second floor.

Heating of the building is accomplished by suspension type circulating gas fixtures.

Inter-office telephone service has been reduced 40% in the new building by reason of the fact that the switchboard operator can see over the entire room instead of having to call different offices trying to locate the person wanted.

Another feature in the new *Mercury Herald* home is that warehouse charges and double hauling of paper have been eliminated by providing newsprint storage space adjacent to the pressroom towards the rear of the building (see diagram). This newsprint storage space has a capacity of 175 T.

Future Expansion

Mechanical Superintendent Steenrod states there are many ways in which the plant may be rearranged should future need for such expansion arise. Nothing has been built in permanently. The front counter, the library, the proof

Mechanical Executive Personnel of San Jose (Calif.) *Mercury Herald*

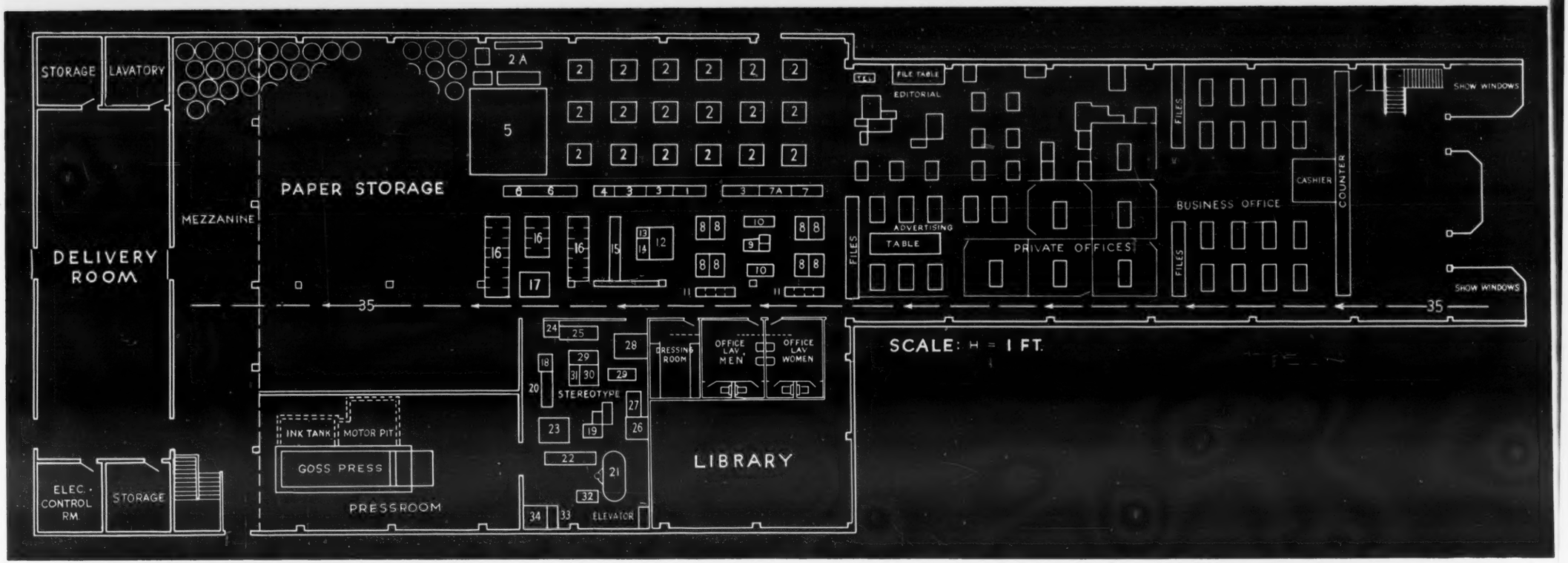
F. L. Steenrod
Mechanical Superintendent

Harry G. Krupp
Composing Room Foreman

Frank W. Hadley
Engraving Dept. Foreman

Ray W. Schroeder
Stereotype Dept. Foreman

E. H. Bogard
Pressroom Foreman



Business, Editorial and Mechanical Department Layout for San Jose (Calif.) *Morning Mercury Herald*

The entire layout was planned by Mechanical Superintendent Floyd Steenrod. Some unique ideas are incorporated in the plan. The first of these is that there are no partitions (excepting hip-high railings) between the business, editorial and most of the mechanical departments. A 4 ft. wide aisle (35) extends from the front of the building to the paper storage room in the rear. Production economies are explained by Mr. Steenrod in the accompanying article. Breaking with the traditional custom of laying out plants with segregated offices and walled-in mechanical departments, Mr. Steenrod asserted: "There is noise, but it is the noise of an organization working in close cooperation. In the morning, the business office has the entire plant to itself. At night the whole front office is the territory of the editorial staff."

1—News copy desk
2—Linotype machines
3—News dumps
4—News proof press
5—Proof room
6—News makeup bank
7—Ad foreman
7a—Linotype ad body dump
8—Ad compositor's work top (see diagram elsewhere)
9—Ludlow caster and matrix cabinets
10—Ad banks
11—Ad makeup trucks
12—Page proof press
13—Small proof press
14—Bank
15—Ad delivery
16—Page makeup trucks
17—Stereo matrix molding machine
18—Mat trimmer
19—Stahi mat former
20—Mat packing table
21—Stereo metal pot
22—Wood Autoplate
23—Curved router
24—Base rack
25—Flat plate shaver
26—Flat-cast metal pot
27—Flat casting box
28—Saw and trimmer
29—Flat top tables
30—Flat router
31—Grinding wheel
32—Hoe caster
33—Tail cutter
34—Hoe shaver
35—4 ft. aisle extends from front to rear of plant, with visibility throughout length of aisle. No wall partitions exist between offices and mechanical departments except in the case of the proof room which has been constructed in such a way that the enclosure is movable to another position.

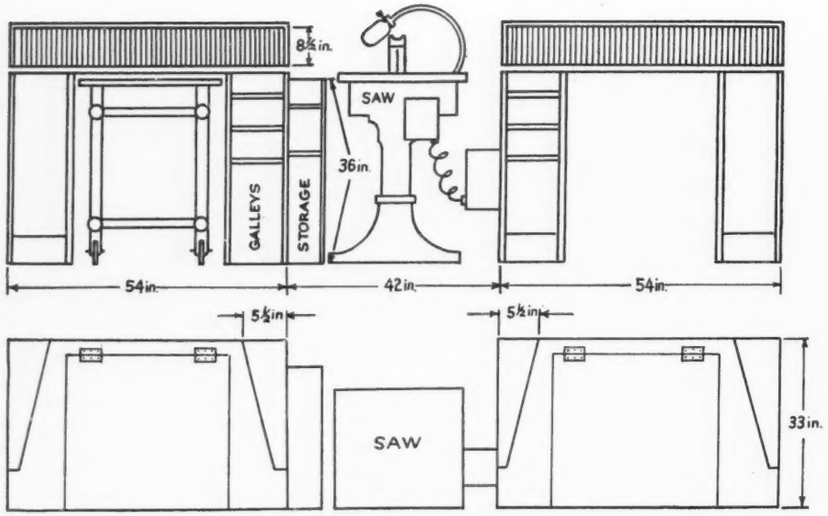
OFFICE MEMORANDUM

March 24, 1942

To Mr. Steenrod:

As an indication of the extent of my satisfaction with our new quarters, may I tell you that in my opinion our new office is worth much more to us than the old one even though the cost of the new building plus all moving and assembling expenses is only a little over one-third of the money we receive from the sale of the old building.

E. L. Hayes,
Associate Publisher



This diagram shows the front elevation and plan view of ad compositor's work top. Mechanical Superintendent Floyd Steenrod states that the work top was originated in the plant of the San Jose (Calif.) Mercury Herald.

In the center of the front elevation diagram at upper left is shown a page form truck. Above the truck is a lid hinged to the back part of the top and which can be raised and used as advertising copy board while the compositor works on a full page ad on top of the truck. In case the ad combositor is assigned a smaller ad before he has completed the page advertisement, he can close the lid and proceed to work on a galley laid upon the lowered work top. Meanwhile, his copy for the page advertisement is laid on top of the form where it will remain undisturbed.

The work tops are covered with masonite and these are waxed regularly, the same as desk tops and counters. Extending across the back part of the work top is a vertical rack containing leads and slugs of varying measures.

At each side, underneath the work top are storage spaces for galleys. In a cabinet at the side of one of the cabinets is a material rack containing the different kinds of material needed in full length strips. These work tops are placed in combinations of two with a saw-trimmer between so that the two ad compositors are within arm's reach of the saw-trimmer. This cabinet has eliminated much footwork.

Where floor space is at a premium, the space provided for the truck has added value in that a truck is always stored under the bank when not in use.

room, in fact, everything except where plumbing or wiring is required is not attached to floor or walls and can be moved readily.

The Library

In the purpose of the library there also is a departure from custom. In this department, in addition to the bound files, editorial clippings, photographs, reference data, and the like, a trained librarian receives and takes care of advertising cuts, mats and mat services. This plan was adopted in preference to piling cuts and mats in drawers and trusting them to the messenger boys. Mr. Steenrod stated: "We consider that an advertising cut which cannot be returned immediately to the advertiser should be as carefully filed as a news cut. In any event, it is likely to have a great deal more value."

Production Notes

Among the equipment layout features, Mr. Steenrod calls attention to the fact that there is a distance of only 9 ft. from the schedule desk in the advertising department and the ad foreman's desk in the composing room. The news copy desk is about 25 ft. from the copy cutter in the composing room. As the result of this planning, messenger boys, dumb waiters and conveyors have been eliminated.

It is admitted that in a building of this type a rigid housekeeping plan must be maintained. There can be no sloppy habits on the part of the office, mechanical or janitor personnel.

Co-Publishers of the San Jose (Calif.) Mercury Herald. *Left to right: Elystus L. Hayes and Harold C. Hayes.*

Government Printing

United States Public Printer A. E. Giegengack has published a 22 page booklet entitled *Procedure and Conditions for the Procurement of Commercial Printing by the U. S. Government Printing Office.* Copies of the booklet may be secured direct from the United States Government Printing Office, Washington, D. C., or from the offices of the various trade associations.

The procedure for procurement of commercial printing by the Government Printing Office is outlined by the Public Printer with the hope that the explanation will clear up many misunderstandings which now exist.

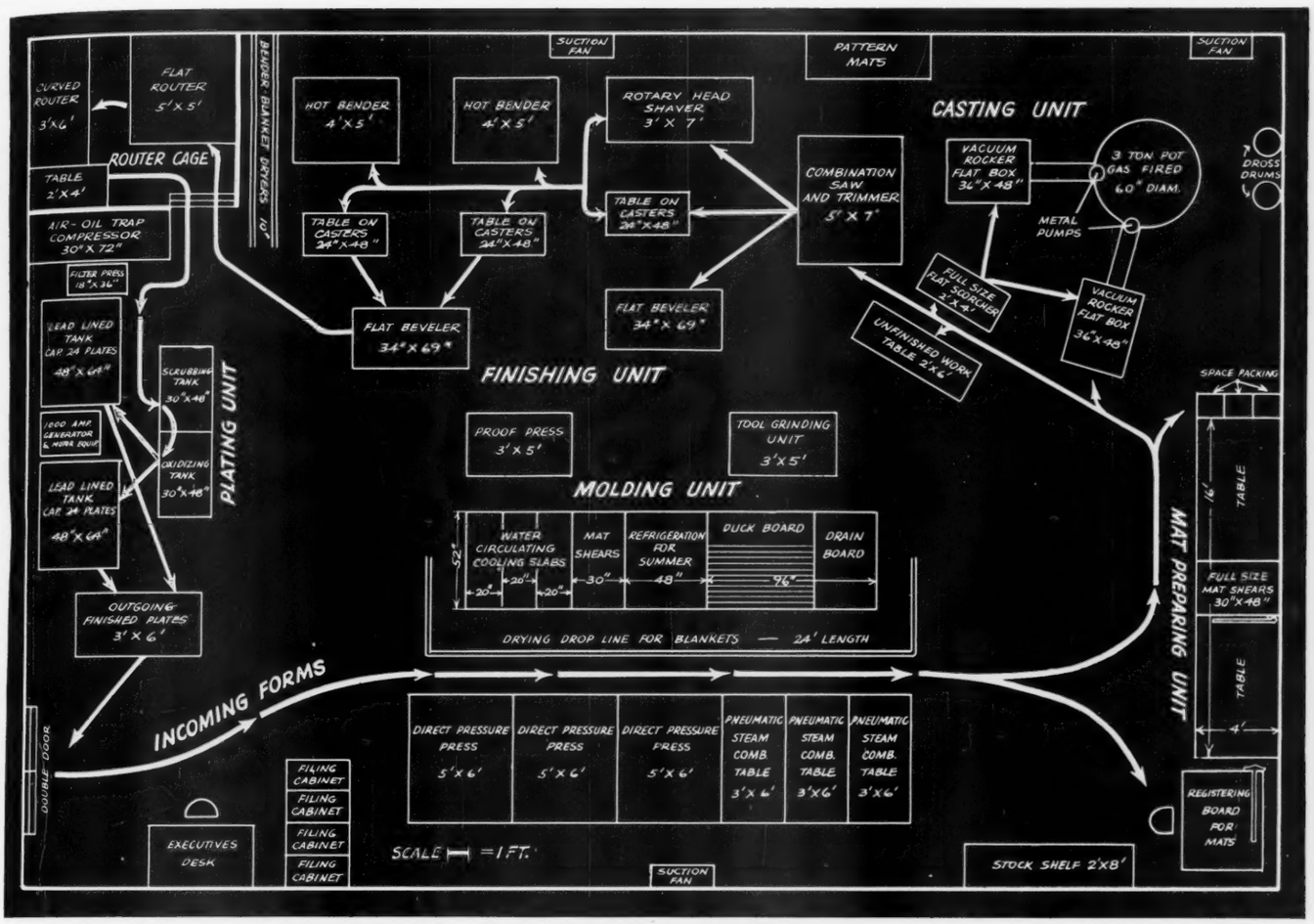
If you contemplate doing Government printing or do not understand the conditions under which it is awarded, we would suggest that you read the booklet.

Moving the Equipment

While the new plant was in course of preparation, the Goss octuple press was dismantled, moved and re-erected in the new building. A standby press was used during this moving operation. When the Goss press was ready to operate, the balance of the plant was moved between 12 o'clock Saturday night and 2 o'clock Sunday afternoon, at which time the plant was ready for operation.

Three drayage firms were engaged. One concern moved the office equipment, using the front entrance. Another firm moved the composing room equipment, and a third firm moved the stereotype and engraving equipment.

The entire moving operation was planned and rehearsed ahead of time by Mr. Steenrod and his departmental executives. Each piece of equipment was placed on a floor plan diagram drawn to scale so that when each machine was brought to the new plant it was only necessary to deposit it in its designated spot and attach the necessary wires and piping. When the truckers arrived, each foreman was prepared to designate immediately what was to be taken out. In this way the equipment was sent over exactly as planned and on perfect schedule.



STRAIGHTLINE WORKFLOW DIAGRAM FOR MAGAZINE TYPE PLANT UTILIZING PLATE HOT BENDING EQUIPMENT

Workflow diagrams are always of interest to printing production executives. The one shown here of a magazine stereotype plate-making plant, was designed and prepared by Manager Earl Geiger of the Geiger Stereotype Company, Dayton, Ohio. Incidentally, this equipment layout diagram is patterned after Mr. Geiger's own plant which is in actual everyday production use. The Geiger plant is engaged in making plates for the general commercial and magazine fields. Mr. Geiger's organization has worked out methods for handling every type folding box job (either flat or curved plate) in black or black and color.

In fact, the Geiger Company executes any type of stereotype plate-making from the finest magazine halftones to the ordinary newspaper ad mat. The company maintains a circular department. In addition to the regular equipment for circular work, a Duplex tubular vacuum casting box, and finishing and routing machines are maintained.

In the diagram shown above the area is 40 ft. by 60 ft. The forms to be plated are delivered through the door in the lower left corner and pass immediately to the molding unit. In this diagram it will be noticed that three direct pressure matrix presses and three pneumatic steam combination tables are provided. The three pneumatic steam combination tables are included because they can be used to good advantage on some jobs in a plant where a wide variety of work is executed.

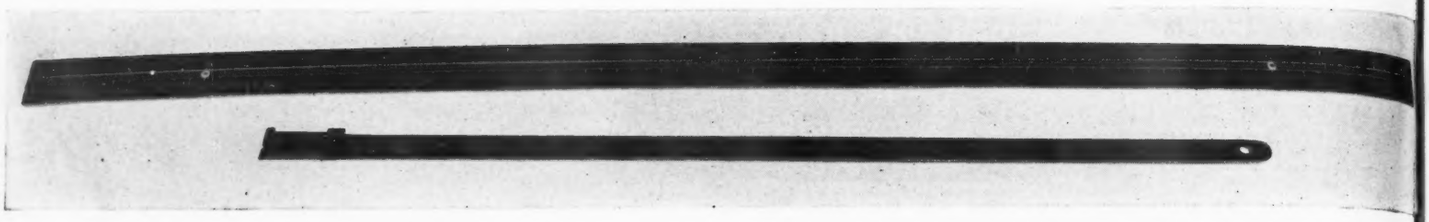
The direct pressure molding press using the baked-on type of mat, Mr. Geiger said, has been found to be essential for the execution of color work where register must be held within close tolerances.

After the form has been molded, the mat is sent to the Mat Preparing Unit where it is packed and trimmed and any hand-finishing operations are done.

Next, the fully prepared mat is delivered to the Casting Unit for drying and casting operations. The plate-casting equipment here is for casting flat plates only. The mat is placed in one of the vacuum rocker flat boxes and metal is pumped by hand from the 3 T. gas-fired pot. In speaking of the casting box equipment, Mr. Geiger thinks it is generally conceded that plates cast in a vacuum box are so generally superior that there need be no argument as to preference because of the all-over level obtained on the printing surface of the plate.

After having been trimmed, the flat plate is sent to the Finishing Unit. This department includes the use of two plate hot benders. In Mr. Geiger's experience, the hot bending system eliminates the necessity for maintaining many different size curved plate casting boxes with accompanying equipment in a plant where general commercial work is executed. Exact register of color plates can be maintained more easily by registering the flat plates and then bending the plates afterwards. The stereotype metal, of course, is alloyed to conform to the requirements of the hot bending system by increasing the tin content slightly and by lowering the antimony content the necessary amount.

Both flat and curved plates are now delivered to the Routing Unit and from there to the Plating Unit (if the plates are to be nickeled). After inspection, the plates are ready for delivery.



Magazine Channel Finder and Matrix Counter for Line-Composing Machines—Composing Room Machinist Bernard Brown of the Cleveland *Shopping News* has provided himself with a couple of gadgets which have proved to be useful, in the one instance, in returning stray matrices to magazines by sliding them in from the top, and in the other instance, the two instruments may be used by the machinist for counting the matrices in any channel when sorting fonts without removing them from the magazine. The work is done from the top of the magazine while in position on the machine or while the magazine is suspended in a rack. The use of these instruments also makes it unnecessary to run out each channel individually to count matrices by hand when sorting fonts.

The scale shown at the top bears the channel sequence with character identification along the two edges. One is for use on Intertype magazines and the other for Linotypes. Two small brass right-angle revolvable clips permit mounting the channel finder on both machines, it only being necessary to invert the finder and rotate the clips according to which type of magazine it is to be mounted upon.

The channel finder is made from a length of 1/16 in. thick black bakelite. The ruling and letter characters were scribed into the bakelite with a sharp instrument and the depressions filled with Chinese White.

The matrix counter also is constructed from 1/16 in. black bakelite and is approx. 1/2 in. wide. Its length is governed by the matrix counting capacity. A thin space matrix is fastened by two flat-head screws at one end of the counter. The bakelite stock is scribed in 1 1/4 in. sections (representing the length of a matrix). The depressions, like the magazine channel finder, are filled in with Chinese White.

Mr. Brown does not claim originality for the matrix counter. Its origination has been variously credited to Carl Bloomberg, Chief Machinist of the Des Moines *Register-Tribune*, and to several others. Both of these instruments are time-savers and the machinist will find it well worth while to provide himself with both.

The time-saving possibilities in using the matrix counter when sorting a font are obvious. When preparing to sort a matrix font, Mr. Brown states he first places the channel finder in position at the top of the magazine. He then inserts the counter gauge into each magazine channel progressively. The scale indicates the number of matrices needed to fill the channel — not how many are in the channel. At each gauging he marks down on a matrix order blank the number of characters needed to fill the channel.

All Jobs Should Be Fed To Register

IT IS a good habit and a necessary precaution to feed all jobs to register because a strike-in may have to be run later or a pull-out may occur when the stock may be saved by a strike-in if the register was held on the original run. The guides should be made secure at the start of the run.

Nothing should be left to chance concerning register. Jobs which permit trim after printing are safeguarded on register by carrying a tack or "nigger head" in the chase so that it prints on the edge of the sheet, in line with the end guide. The print of the tack head will show any variation in register. When sheets can not be trimmed after printing some extra sheets may be printed after job is ready to run. At intervals during the run, one of these sheets may be sent through the press a second time to check on the register.

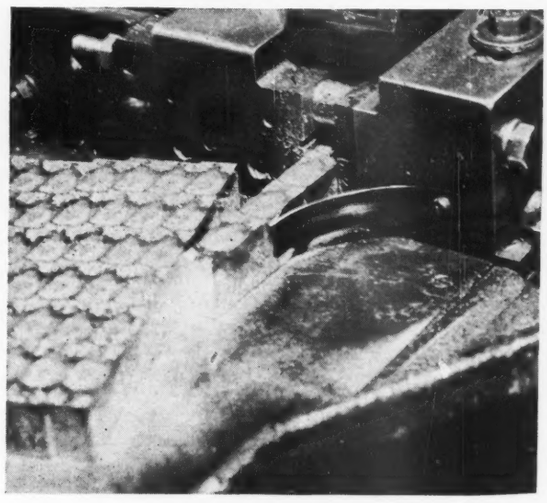
Base Stacker for Monotype

A BASE stacker for use on the Monotype Giant Caster has been devised by Si Vermaire, operator of the Grand Rapids (Mich.) *Press*. As is shown in the illustration, Mr. Vermaire's base stacker device consists of a piece of alarm clock spring fastened by means of one screw to one block of the delivery side of the mold.

It should be explained that all base up to 5 columns is cast in labor-saving lengths at the *Press*. All base is 36 pt. body size. Mr. Vermaire explains that with the use of this base stacking device no adjustments are necessary when changing to a different length base and in his experience no jam-ups on the delivery table have occurred when casting base of different lengths.

The clock spring selected is 1/2 in. wide by 0.017 in. thick and before flexing the spring is 2 3/4 in. long. The spring is held in position as shown in the illustration by one screw which is turned into a hole in the mold block. The tapped hole is 3/4 in. from the rear and 1/2 in. from the bottom of the rear bolster.

When the spring has been curved properly by hand, and with no base protruding from the mold it will flex outwardly about 5/8 in. When base extends from the mold and with the spring bearing against the base, the spring is flexed outwardly about 1 1/2 in. Another way in which to explain the flex or curvature of the spring is to say that when no base is extending from the mold the end of the spring should extend about 3/8 in. in front of the mold opening so that the base lengths which have been ejected will be pushed clear of the path to be taken by the next piece of base as it is ejected.



View of clock spring base stacker applied to Monotype Giant Caster for stacking 36 pt. base in plant of Grand Rapids (Mich.) Press *by Operator Si Vermaire.*

Garamond Booklet

Intertype Corporation has just released a new typeface booklet showing the complete Intertype Garamond family. Printed in two colors, the booklet consists of 32 pages and cover, and includes exhibits showing the Garamond face in practical use.

MATRIX ORDER

(for 5 pt., 6 pt., 8 pt., and 10 pt. fonts.)

ORDER FROM ☐ Intertype ☐ Linotype

TYPE FACE _____

FONT No. _____ SLOT No. _____

Machine No. _____ Model _____

☐ 90 Channel ☐ 72 Channel

☐ Two-letter matrices. ☐ Single-letter matrices.

LEADERS ARE FROM INTERTYPE—Special No. 4, Round Dot Low. 2 dots to Em on all fonts EXCEPT GARAMOND.

Remarks .....

.....

.....

.....

Ship this order to "Black & White" for processing

Lower Case	Punctuation	FIGURES	CAPS
21 ee	fl	21 1	
21 e	fl	21 2	18 E
21 t	ff	21 3	18 T
	1/8		
21 a	ffi	21 4	18 A
	1/4		
21 o	ffl	21 5	18 O
	..		
21 i	21 em	21 6	18 I
21 n	21 ,	21 7	18 N
21 s	21 .	21 8	18 S
21 h	10 :	21 9	18 H
21 r	10 ;	21 0	15 R
	3/8		
21 d	?	21 $	15 D
21 l	21 en		15 L
21 u	10 (		15 U
21 c	|		15 C
21 m	21 '		15 M
21 f	21 !		15 F
21 w	21 -		15 W
21 y	21 thin		12 Y
21 p	10)		15 P
	Em		
21 v	21 .		12 V
21 b	21 '		15 B
	1/2		
21 g	*		15 G
	Em		
21 k	21 ..		12 K
			%
21 q	@		8 Q
	3/4		
21 j	lb		12 J
	1/8		
12 x	&		12 X
	Em		3/4
12 z	21 —		12 Z

Blank for Checking Matrices

Miniature reproduction of line-composing machine matrix font checking blank, compiled by Bernard Brown, Machinist, Cleveland Shopping News. *The quantity of matrices in each channel represents the preference of the* Shopping News *rather than that of any font scheme as made up by machine manufacturers. This blank is filled out from the back step of the machine when the gauge shown on the opposite page is used to count the number of matrices in each channel of the magazine.*

TANK *fitted with gas burner and air line for agitating solution is used for cleaning machine parts in Cleveland* Press *composing room*

BECAUSE certain supplies, including chemicals, used in printing plant maintenance are becoming increasingly difficult to obtain, alternative materials and equipment have been adopted in some printing plants. Particularly, clear run gasoline, chromic acid and carbon-tetrachloride used in cleaning machine parts, cannot be obtained readily in certain areas.

At the Cleveland *Press*, Composing Machinist Hal Mowry has devised a tank arrangement in which composing machine parts (other than magazines and matrices) may be placed in a substitute solution for automatic cleaning.

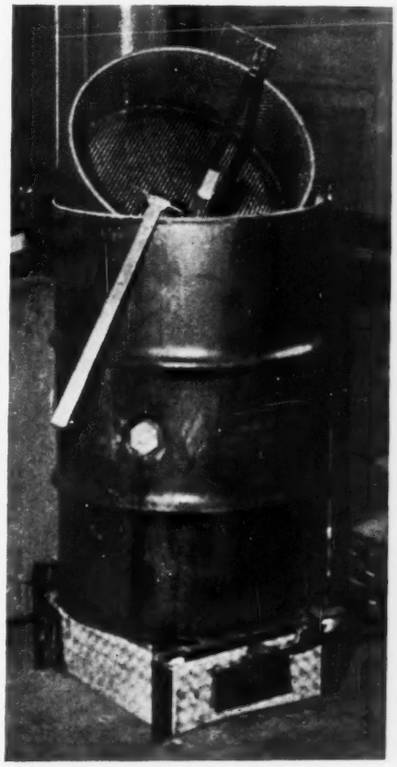
The cleaning operation of machine parts s done without manual brushing or scrubbing. Although a hot soda solution or a number of prepared products could be used, Mr. Mowry employs Puro Special Metal Cleaner which is delivered in dry powder form. The powder is mixed with water contained within a drum. The parts to be cleaned are lowered into the tank by means of a wire basket. The cleaner mentioned above brightens the surfaces of brass keyboard cams and cam yokes and removes all grease and dirt from the surfaces of any parts placed in the tank.

Mr. Mowry used a 55 gal. heavy gauge steel drum set upright as is shown in the accompanying illustration. The drum rests on a base the top of which is 8 in. from the floor. The base was made from angle iron and galvanized steel.

The basket or cage in which the parts to be cleaned are placed was constructed at a metal working plant from ¼ in. mesh acid resisting screening. The basket is 22 in. diam. by 8 in. deep. Two heavy wire bails were welded opposite each other to the top ring of the basket. To each bail is fastened a 20 in. hanger for supporting the basket in the tank and to provide a means of lowering the basket into the solution and lifting it out of the tank. In the Cleveland *Press* plant, the 30 gal. solution maintains its cleaning qualities for a 30 day period.

The solution is heated by means of an ordinary type 6 in. diam. natural gas burner piped with ⅜ in. gas pipe so the burner will be positioned centrally underneath the drum. While parts are being cleaned, the temperature of the solution is maintained at a near-steaming point. While the parts to be cleaned are suspended in a wire basket in the drum, an air line (⅛ in. pipe) extending from the top of the drum to a point underneath the basket keeps the solution agitated constantly. This air line terminates in a nozzle or head made from a ⅜ in. by ⅛ in. reducer fitting. A plug is screwed into the large end of the reducer to stop off the air. Four holes (No. 52 twist drill) were drilled at an angle of 90 deg. so that the air jets will agitate the liquid in four directions.

When it is desired to empty the spent solution, the air agitator pipe line projecting into the drum is removed by a union connection at the top edge of the drum and the drum is then taken to a drain on a floor lift truck.



View of machine parts cleaning arrangement devised by Machinist Hal Mowry for the Cleveland Press *composing room. The parts to be cleaned are suspended in the cleaning solution contained within the 55 gal. steel drum. The solution is maintained at near steaming point temperature and is agitated constantly by a small compressed air line.*

Russell J. Hogan, Superintendent of the Wickersham Press, Inc., of New York, N. Y., and Second Vice President of the New York Club of Printing House Craftsmen, will be one of the two co-chairmen directing the clinic on letterpress presswork at the International Craftsmen's Convention to be held in Grand Rapids, Mich., August 9-12. At present Mr. Hogan is in charge of the modernly equipped Wickersham pressroom where mainly color work is run letterpress, offset or sheetfed gravure. In search of experience Mr. Hogan deliberately has gone from job to job in different printing plants. In 1936, he came to Daniel Moscow, Inc. (now the Wickersham Press, Inc.) as general superintendent.

Fowl Play...

— A Windy Bill Story

By L. H. HOUCK

BEESWING BILLINGS, sometimes called "Biddy" Billings because of an extra fondness for chicken, cocked an ear at a 45-degree angle and listened as he reflectively eyed the yellow moon which hung over the Ybor section of Wildwood. The hour was late and most of the early-to-bedders had left the streets. Beeswing took a few more steps and again stopped to listen, and as his ears assumed a listening position, his nose twitched as it tested the various odors carried on the night wind. Not for nothing had he been nicknamed "biddy."

"I hear chickens—I smell chickens." Beeswing addressed his silent companion, Windy Bill Smith, linotype machinist of the Wildwood *Daily Record*, where Beeswing hung up his slip as an operator. Windy Bill, who was either helping Beeswing home or Beeswing was helping him, a question on which they were unable to agree, gave no indication he had heard about the chickens.

Beeswing drew himself up to his full five-foot-eight, including shoes and dignity, and looked sternly as Windy Bill like a school teacher with an unruly pupil at bay.

"Chickens," he repeated more loudly, but still Windy Bill did not reply. Then, needing further emphasis, he resorted to sign language to reinforce the spoken word.

"*Chickens!*" Beeswing shouted, and flapping his hands against his sides, he uttered a "*Cock-A-Doodle-Doo.*"

Had it not been for a brooding resentment against one Waterloo Watts, a panty-waist linotype operator, who at that moment was working the night shift alone at the Wildwood *Daily Record*, Windy Bill would have been in a mellow mood.

But Windy Bill had not forgotten the time when Waterloo Watts got his hair oil all over the mats, causing Windy an extra cleaning job. Waterloo's jibes and his air of aloofness had not gone over big with the old machinist. The return of Waterloo Watts, the detested name on the slipboard written with lavender ink, and the heavy odor of crushed violets which hung on the air through which the elegant Mr. Watts walked, had in reality provoked Mr. Windy Bill to treat himself to a night out.

So that is why he is found during the dwindling hours of the early morning, just completing an inspection tour of the jook joints and night clubs, during which he had been assisted by the popular Beeswing Billings. But thoughts of Waterloo Watts had left him in dour mood.

So when Beeswing flapped his hands and shouted "*Cock-A-Doodle-Doo!*" in a voice which rattled the windows, it broke Windy out of his reverie.

"Pipe down," Windy shouted, trying to talk louder than Beeswing. "Want to wake up a policeman? Too much high octane stuff'll burn your valves out. It would purely pleasure me to hear you shut up."

"Chickens," answered Beeswing. "I'm gonna swipe me one of them chickens." And suiting action to word, he hopped over the fence and in less time than it takes to tell, was back walking alongside of Windy Bill with a great big old Dominecker hen under his arm.

Beeswing cooed under his breath to the chicken as they walked along and the old hen clucked contentedly.

"Can't help it," Beeswing said to Windy by way of explanation. "When I hear a chicken clucking, it gives me historical fits. Can't help taking them. That guy had a whole chicken house full and I only took one. I surely am a fool about biddies."

Windy Bill was more than astonished at the turn of events. They came to a street, where a green traffic light gave them the right-of-way at the intersection, but Windy pulled Beeswing back.

"You and your chicken wait till the light turns red," he said. "We'll walk across on the red just to show our independence."

The light turned red, as traffic lights will, and Windy Bill and Beeswing were half-way across the street before a chromium-plated front barely missed them. The screeching tires woke up the old Dominecker hen, which Beeswing carried and she now cackled loudly, as though she had laid an egg.

"Kut-kut-ka-da-kut," she clucked as Windy Bill and Beeswing scrambled to the safety of the sidewalk.

"Come on," Windy said, "We'll take that hen down to the *Record* office and put her in my locker, where she can cackle all she wants to."

"While we're there," he continued, "we'll see if that fancy operator, Mr. Waterloo Watts, the 'swift,' has wrecked the machine yet. Imagine leavin' a guy like that runnin' one of my machines by hisself. No tellin' what he'll do."

Beeswing had succeeded in quieting his hen and they proceeded more peacefully toward the *Record* building. A dim light glowed from the second story, where Waterloo was putting out his night's work.

"I'll think I'll take this big old biddy home," Beeswing said. "She don't want to be locked up in no locker."

"Gimme that hen," and Windy Bill snatched the chicken from Beeswing and started up the stairs with Beeswing following along behind.

Number Seven was clicking merrily when they slipped into the composing room. Lines were following lines with the precision of clockwork. Waterloo Watts sat in front of the keyboard like a god. He moved his slim fingers deliberately over the keys and his red-painted finger nails glistened under the single light from the machine. The mats fell like rain, filling each assembler long before the machine had finished casting the previous one. Waterloo had mastered the art of concentrating on his copy and he was putting the lines on the clock.

Windy Bill and Beeswing Billings crept silently up in the back of him. Both were fascinated by the picture, a man working like a machine, a frail, effeminate and wonderfully constructed human, who, whatever his other faults might be, could make a linotype machine do tricks.

Even the old Dominecker hen, which Windy Bill held, turned her head sideways to view this phenomenal operator, and what she saw caused the drooped section of her comb to raise slowly in unrestrained amazement.

Waterloo had parked his monogrammed silk handkerchief on the pi tray so that the "W W" was prominently displayed, rivaling the pink hemstitching and tatting which graced its edges. On the handkerchief in all its ruddy glory, rested his bottle of red finger nail polish.

Waterloo was unaware of their presence. The noise of the constantly turning machine drowned what little sounds they made. They were so close behind Waterloo Watts they could read the copy he was setting, which happened to be a take of the serial story then running in the *Daily Record*.

Windy Bill screwed his eyes up so he could see through his glasses and for a moment became absorbed in the story, and as he read, he stroked the back of the old Dominecker hen.

"Betty kept her horror-stricken eyes on the slowly opening door," the story read. "The kerosene lamp flickered in the draft and cast grotesque shadows which danced like ghosts upon the wall. The wind moaned dismally through the trees and a chill crept into the house like a fog. A shapeless mass of black materialized in the gloom in the rear of the room and crept silently up behind Betty and then suddenly without warning the black monster dropped a big sack over pretty Betty's head."

Windy Bill, with pursed lips and tilted head, made out the words painfully, and the chills that ran up his spine, gave him inspiration.

(*Continued on Page 70*)

Author's Note: The word "dominecker" may be unfamiliar to many readers, although it is a colloquialism used in many localities. It seems to originate from Doninique, which Webster defines as a breed of domestic fowl having a rose comb, yellow legs and plumage similar to a Barred Plymouth Rock. The word is used in many places to designate a second rate chicken or those with Plymouth Rock feathers but not of a pure strain.

IN WARTIME

Careful maintenance of machines and equipment is not merely a patriotic duty—it's an economic necessity. To add years of life, to *assure* continued efficient production—machine maintenance methods must be doubly effective.

Five free booklets, the Linotype Life Extension series, have already been distributed throughout the industry. But these maintenance booklets are just part of Linotype's program. At each agency and at headquarters in Brooklyn, anyone needing advice or counsel in composing-room maintenance or production will find friendly experts to help him. Your interests are Linotype's interest.

LINOTYPE

If there are any of the five maintenance booklets shown here that you haven't received, a note to your Linotype agency or a word to your representative will bring what you need.

Linotype Spartan Heavy and Erbar Light Condensed

TECHNIQUE *for newspaper pressrooms during the war — Press repairs, rubber conservation, roller, blanket and newsprint handling methods*

By FRED C. HUDSON*

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NEWSPAPER printing presses should be checked more often than in the past to try and detect worn parts so that they can be replaced while the parts can be secured. The old parts should be saved for emergencies. Thought should be given to local concerns capable of producing press parts and gears, as anything that can be produced locally leaves the press manufacturers free to continue the work being turned out for the Government. More presses wear out because of lack of proper lubrication than from any other cause. The results are not immediately apparent and, therefore, not alarming. Wear is insidious, so slow that it may not be noticeable for months or even years. It may take a long time for a part to wear out completely, but during all that time there is a gradual increase in looseness, vibration, and loss of precision, which finally affects the product to such a degree that costly new parts or an overhauling job becomes necessary to prolong the usefulness of the machine.

Do not attempt to economize on lubricants, as good oil and grease are more important now than at any time in newspaper history. I don't mean that oil or grease should be wasted, but should be used on all moving parts, which is an insurance against parts wearing out, hot boxes, and numerous other delays. Lubrication should mean more than oiling up a press. It should include a knowledge of the different grades of oil and grease required and the correct time, method, and places of their application.

Lengthening Columns

Some newspapers can add from 1 to 7 lines per column without making mechanical changes in any department. Consider that if 2 lines are added to a column, this means 512 lines on a 32-page paper, or about 1¾ columns of space that could be devoted to news matter or advertising.

While some papers have adopted 4 pt. column rules, there are still a large number who continue to use 6 pt. Newspapers that have changed to 4 pt. rules have been able to reduce their roll length from ½ in. to 1 in. Where 4 pt. column rules are used with 12 ems, a 66½ in. roll can be used with fair outside margins.

With a blanket opening of ¾ in. and ½ in. margin bars, it is possible to print the following over all linage with ½ in. head and tail margins:

21½ in. cutoff.....285 agate lines
22¾ in. cutoff.....304 agate lines
23⅞ in. cutoff.....315 agate lines

Closing Cylinder Gaps

Several papers have reported to us that where they have 1 in. openings in their blanket cylinders they have filled these in so as to only have an opening of ¾ in. This is accomplished in the following manner: A steel strip of the thickness needed is fastened on the head side of the slot with tapered pins set every 2 in. Screws are spotted between the pins to help make it more solid. Of course, closing up the blanket opening from 1 in. or wider, to ¾ in. means that it is going to be more difficult to change blankets. One newspaper that has recently filled in the impression cylinder slots from 1 in. to ¾ in. explain the method used in putting on new blankets. The underneath blanket goes on the pins, the cork and top sheet are pinned together on the lead end and reeled in together. On the tail end, the cork is free and the top sheet is pinned to a flap and reeled in.

In lengthening the pages as outlined above, the only change necessary in the composing room is possibly to mill out the foot stick (unless it will not take the added linage) and rescribe the chase. In some cases the stereotype equipment will take the additional linage without any change being made. Others may find it necessary to make changes in the side gauges, cylinders and shavers.

Of course, the procedure outlined above applies to semi-cylindrical and flatbed web presses. On tubular presses, it is necessary to slip the plate over the cylinder boxes. For this reason, it may be that this increased column length cannot be secured, although it is a matter that is well worth checking into by those operating tubular machines.

Cutting Rubber Conservation

One newspaper has written us that it has been experimenting with cutting rubbers. Formerly, this newspaper only used two sides before throwing the rubbers away. Now, after the first side of the rubber is used, twine is inserted in the cut and in the second and third cuts as well. This twine forms a support to permit use of all four sides of the rubber which provides much additional mileage.

Another newspaper informs us that it uses all four sides of the rubbers and then underlays the last side cut and planes it off to height. A jig has been made which permits setting the underlaid rubber and

POINTS *to consider in any campaign for newsprint waste reduction in the printing plant*

IN his talk before the Des Moines (Ia.) Iowa Newspaper Mechanical Conference, Director Fred Hudson of the Newspaper Engineering Department of the Technical Trade School at Pressmen's Home, Tenn., enumerated the points which must be observed in any plant campaign for newsprint waste reduction.

These are as follows:

1. Are the rolls of maximum diameter?
2. Winding at the core.
3. Wrapper should be only heavy enough to protect the roll.
4. Condition of spindles, chucks, pressroom and storage floors.
5. Is the best possible method of handling used?
6. Utmost attention must be given to all the various details after the paper is in the press, *i.e.*, be sure there are no nicks, end of rolls sprayed if paper is dry or brittle, that the flyboy does not throw out too many papers for a splice. If webs are continually breaking in the press, don't blame the paper until after you have checked impression, compensators and plates to make sure your trouble is not in the press.
7. Be careful in making splices.
8. Plate up the press with as few moves as possible.
9. Make as few moves as possible in threading the press.

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its box in a frame that causes the rubber to project. A carpenter's plane is used to cut the rubber down to the right height. When this goes down, the rubber is underlaid again until it is impractical to repeat the operation.

Another paper informs us that it has been getting fair results in using old rubber blankets for cutting rubbers. These rubbers, which are 0.062 in. thick, are cut in strips and glued together on a maple stick, or any kind of wood that does not warp, and then set into the cutting rubber box at the prescribed height.

Discarded cutting rubbers should be saved. While there may not be any market at the present time, in all probability there will be later on.

Conserving Rollers

There is no question but that numerous rollers have been ruined because they were not set properly to begin with and were not reset and backed off often enough to take care of the swelling. If a periodical check is made of rollers, 50% of the re-grinding and polishing would be eliminated. There seems to be a tendency by the majority of pressmen to set rubber rollers much harder than is necessary. This probably dates back to the time when rubber rollers were new to pressmen and had many defects, such as uneven swelling, which made it necessary to set them heavy to bring up the low places. This, of course, is not true today, as all of these defects have been corrected. A good roller carefully installed and given proper attention will last many years. Heavy setting of rollers causes wear on socket bearings and also makes a drag on the press which requires more electrical current to drive it.

A pressman should bear in mind that a rubber or synthetic roller does not shrink, but always swells. The lighter the roller is set the better the printed results. The most important thing, however, is that much longer life is added and a great amount of re-grinding is eliminated.

Don't Clean Fountains Too Often

In some pressrooms, ink fountains are cleaned more often than is necessary. Before rubber rollers were adopted generally, composition rollers as well as the ink had considerable tack. This tack lifted the face of the newsprint which accumulated on the rollers and worked back into the fountain. This made it necessary to clean ink fountains with some degree of regularity. This is not true today, however, considering the news ink and the rubber and synthetic rollers we are using. If the fountains are piped and the ink tank is clean, very little cleaning of the fountain should be necessary and thousands of pounds of ink will be saved.

Cylinder Blankets

Blanket manufacturers are experimenting constantly with new material for press packing. As one manufacturer expressed it, progress seems slow due to the delay in securing material for experiments, and then after it is processed, it must be tested in a pressroom for two or three months under various conditions. It is, therefore, going to be necessary for pressmen to be very careful in regard to setting impression so as to secure additional impressions from blankets and top sheets.

Des Moines Newspaper Executives Actively Engaged in Preparing Arrangements for Iowa Mechanical Conference—*These four men (all identified with the Des Moines (Ia.)* Register *and* Tribune*), from left to right are: Carl Bloomburg, Chief Composing Room Machinist; Andy Jose, Stereotype Superintendent; Harry Murphy, Composing Room Superintendent; and Val Wells, Assistant Mechanical Superintendent. Mr. Bloomburg is President of the Iowa Linecasting Machinists' Association, which will hold its annual meeting in conjunction with the Iowa Conference. Val Wells, in addition to being Second Vice President of the Iowa Mechanical Conference, is chairman in charge of arrangements in the host city.*

Wiping Cloths

The majority of pressrooms today use wiping cloths which are laundered a number of times before they are unfit for use. There is no question that at times wiping cloths are returned to the laundry when they could have been used for a much longer period. Where these cloths are furnished, pressmen quite often use them for wiping up the press. They then discard them when they could have been used for a longer period in wiping the ink fountain tops and other parts of the press which would have soiled them completely and certainly cut down on the volume which is returned to the laundry.

Newsprint Handling

Experience with the paper mills has indicated a desire on their part to extend 100% cooperation to the newspapers in regard to the handling of paper from the winders at the mill, wrapping, and getting the proper cooperation from the railroads in the matter of equipment. We believe there should be closer cooperation between pressroom executives and mill superintendents. This can be accomplished by one visiting the pressroom and the other the mills. Through a better acquaintance of their mutual problems it is often possible to not only eliminate waste but to improve upon the quality of the sheet.

To determine whether or not any transit damage has taken place from the time the paper is loaded at the mill until the destination is reached, someone in authority should examine each roll as it is unloaded from the cars. This not only will justify any claim to the railroads but also makes it possible for a good check to be made as to what really caused the damage. The floors of the cars may be weak and springy, causing a consequent rubbing of two rolls together. There are several ways in which newsprint is loaded. Some mills load the cars loose; others load with the unit system which consists of a wire band tying several rolls together, while others use the toe block at the car door.

One of the complaints registered by the mills for years is that pressrooms complain about the running quality of the newsprint, showing a high average of breaks but that they are very careless about saving the alibi or evidence that caused the break. We believe this is true, but some of the mills can also be censured for not stenciling the roll number within 2 in. or 3 in. of the core. If this is done, it enables the pressmen to get the number of the roll even though the roll has been run down almost to the core. It does no good to complain to the mill about the number of web breaks unless you have the evidence, together with the roll number. If this is available, it is possible for the mill to check back to the machine and even the shift on which the paper was made.

When a break occurs in the press and the paper wraps the impression cylinder, have the fly boy find the evidence by locating it from the last paper in the fly that contained the end of the broken web.

Much has been accomplished in the last few years in regard to newsprint

Hoe did it before...and...now...does it again!

Building ordnance equipment for our nation's armed forces is a tradition at the plant of R. Hoe & Co., Inc. Nearly 100 years ago, in 1847, there is an entry in an old company record that tells how Hoe built a 3-inch cannon under the direction of a now unknown army ordnance officer. That was long before the Civil War. Later, when that epochal struggle broke out, Hoe built the equipment that was used to make the rifles for the Union Army, and before the end of the war Hoe was producing about 50 to 60 different kinds of machine tools for war purposes. So it was again in the Spanish American War, and the Hoe record of service to our country continued into World War No. 1 when the United States assumed the burden of stamping out autocratic militarism in Europe. In that War the major contribution by Hoe was the building of gun mounts for the Navy. And now, today, Hoe is again serving our country to the utmost of its ability and capacity.

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waste, but there still remains considerable educational work to be done by superintendents and foremen among their workmen. It is very important that the different classifications of waste be segregated as there is a vast difference in the price received for mixed waste and white waste. When mixed waste gets into a bale of white waste, the waste paper dealer will invariably classify this bale as being mixed waste which brings less than half the price of white.

I sometimes think that we lay entirely too much emphasis on core waste. I say this for the reason that in trying to run down almost to the bare cores, quite often the web is lost. In rethreading, three or four other webs are feeding into the folder with a consequent increase in folder waste. Now if a few wraps are left around the core it lessens the danger of a break. White core waste will bring approximately double the price of folder waste.

Flyboys should be trained carefully in regard to setting aside papers when a splice is made and then later going through these, one at a time, to make sure that no papers are thrown away except those that actually contain the splice. The same thing should be true of the first papers run after a break. Only too often flyboys reach in and pull out the first 30 to 50 papers without examining them. If they had been examined, no more than 15 or 20 would have been thrown out.

CONSERVATION *of offset-lith supplies*

By C. W. LATHAM*

*New York, N. Y.

MOST offset-lith rollers and blankets will absorb the lighter distillates used in washing them, also the lighter compounds that are used to reduce ink. This absorption causes swelling in the areas where it takes place. Gasoline and naphtha will evaporate out of the blanket but kerosene will not. For this reason blanket and roller washes should be confined to gasoline and naphtha. Other oils should be avoided both in the blanket washes and in the inks.

Blankets and rollers, due to absorption of oils often will oxidize and become soft and tacky and therefore become unfit for printing. A later development—glazing—takes place when a hard ink-resisting coating forms on the surface. This coating makes good printing impossible because of the poor transfer of ink and the loss of roller traction. The form rollers should be kept in a pliable condition with a velvet-like surface because, being friction-driven, they will skid when glazed, smearing the work and causing roller streaks. Rollers that have gotten into this condition may usually be restored by going over them carefully with fine garnet paper. A glazed blanket should be laid on a flat surface and scrubbed with blanket wash and pumice.

Highly doped inks, inks with free oils, kerosene, and the like, or those containing a large quantity of dryer are most harmful to blankets because they cause swelling and hasten oxidation.

Cobalt dryers are particularly harmful because they are such powerful oxidants. Lead and manganese dryers, being less powerful are far less harmful.

Turpentine is another great enemy of rubber and therefore should never be used on blankets or rollers. Sunshine, daylight, air and even the oil mist in the air from the pumps all contribute to the shortening of blanket life.

Blankets should be rested periodically since this would give the absorbed oils that are concentrated in the printing areas a chance to disburse and to spread themselves over a greater area, thereby delaying embossing. It is good practice to have two good blankets for each cylinder, changing them at least once a week. If working on a long run where it takes two or three days to run off one color, it is advisable to exchange blankets at the end of each color, taking care to wash each thoroughly in order to insure proper dispersion.

Before used blankets are stored, they should always be washed thoroughly with the proper blanket wash, then scrubbed with pumice if necessary to make sure they are clean, following which they are ready to be rolled up, wrapped in paper and stored in a cool, dry and dark place.

What has been said about blankets is equally true of rollers which deteriorate quickly under trying conditions. Vulcanized oil rollers are more resistant to swelling, are excellent ink conductors and retain their traction if properly cared for. The use of synthetic rollers may be necessary when conditions are particularly severe; but since so many good rollers are now available, little trouble should be experienced in finding one to meet your needs. Practically every roller maker has two or three grades to fit conditions.

One of the things that has made the composition roller popular is the ease with which it may be cleaned and the consequent saving in time thereby afforded. Unfortunately, however, when it becomes easy to do anything, the doing is thereafter left to unthinking or untaught boys who all too often, by operating the washup machines carelessly, ruin rollers by leaving pigment down into the pores of the rollers after each washing. This pigment slowly accumulates, forming a crust and finally cracking the rollers near the ends. If after washing the rollers with the blanket wash until they seem thoroughly clean, the operator will put a knife full of light varnish on one of the rider rollers and run it through the inking system until it has pulled out the hidden pigment, following which he washes carefully a second time and wipes the ends of vibrating drums with a wiping cloth, the rollers will last appreciably longer.

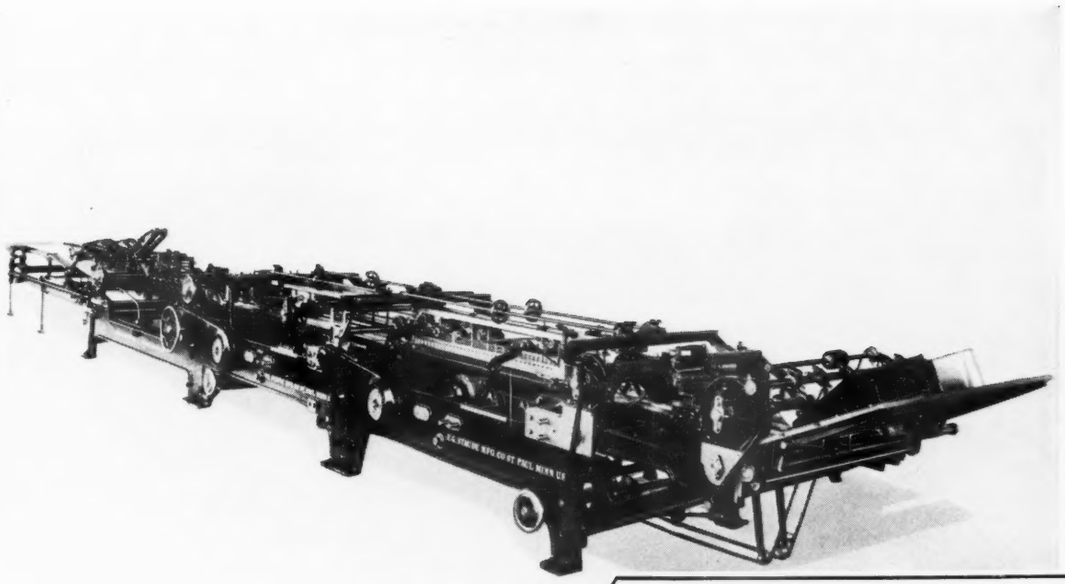
Form rollers must have traction in order to be properly driven by the friction of the drums, especially at the cylinder gap where they lose contact with the plate. Loss of driving friction at this point allows the forms to slow down and a possible skid to occur along the front edge of the plate until they again pick up normal speed.

Another way that rollers may lose speed at the cylinder gap is by losing contact with the drums. This, of course, is possible only when the roller sockets are set too low. When properly set, rollers will be supported at all times by the sockets and thus kept in contact with the drums. If the rollers are allowed to drop below the surface line of the plate, they will receive a bump when the leading bend of the plate again contacts them. Obviously, this "bump" will produce a streak upon the roller which is, of course, transferred to the plate, one roller revolution back from the bend. Even perfectly set rollers are apt to cause a noticeable streak at this point, due to the loading of the rollers at the gap. Bear in mind that when a form roller is riding over the cylinder gap, it is not divering ink; likewise when it is riding over a blank part of the plate. But since at such times the roller continues to receive ink, it naturally becomes overcharged. This overcharge is, of course, dropped upon the first image with which it comes into contact with the inevitable result that such image becomes over-inked. This means that a definite dividing line in the form of a streak will become visible between the area covered by the first and the second revolutions of the roller.

If the form rollers are uniform in size, they drop their overload on the same spot. But when they vary in size, a tapering off occurs which makes the streak less noticeable.

Form rollers do not need to be uniform in size, inasmuch as they are surface driven; consequently, regardless of their respective diameters, their surfaces will have the same speed.

Rather than let all four form rollers wear out entirely and replacing them as a unit, it is better to replace them one at a time, thereby insuring average performance by the press. When putting in a new form roller it is good practice to mark it with a single painted ring on one of the spindles and plate it in the last position, the next best roller, painted with two rings, in third position, etc. When roller No. 4 needs replacing, the new one is put in the last position and the other three moved, each one, of course, receiving an additional painted stripe on the spindle. In this way rollers will never be put in backward or in their wrong positions after having been taken out for dressing.



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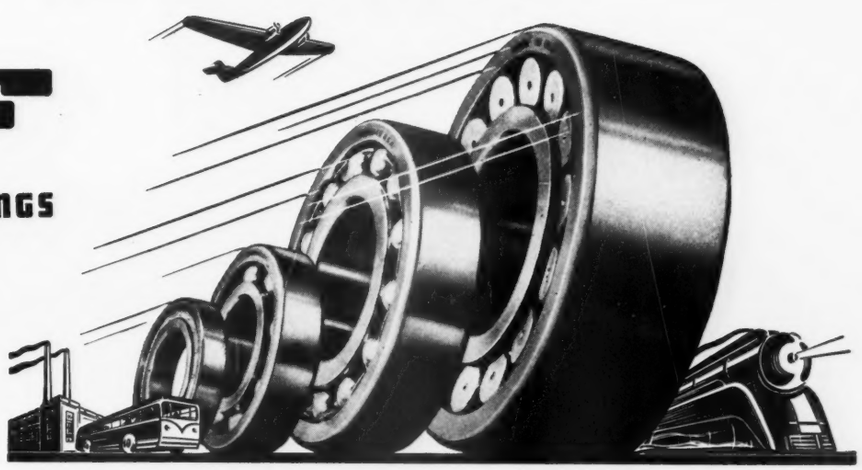

How Printing Inks "Dry" — *Drying of printing inks may be by penetration (or absorption), evaporation, gelation, oxidation, a congealing or freezing process, precipitation or through a combination of two or more of certain of these processes*

Ink Dries by Penetration or Absorption

As used in letterpress newspaper printing in rotary presses.

NEWS ink for newspaper presses (the ink used in greatest volume) dries by penetration or absorption into the paper. The film of ink on the paper is about one-tenth as thick as the thinnest tissue paper which calipers 0.001 in. It consists of selected and refined carbon black which, after a process of air flotation, is twelve times as fine as pastry flour, ground in mineral oil vehicle of correct viscosity to yield an ink of proper consistency for the fast presses, some of which are fitted with pump fountains.

A help to faster drying of an ink is to increase its color strength so that a thinner film will cover but news ink works better if carbon black content is held down. Too much causes filling of plates, caking on solids and piling on angle bars, blankets and pipe rolls. Carbon black combats rather than assists drying. A toner of bluish or purplish hue is commonly added but driers are omitted as they are useless.

When the microscopically thin ink film is impressed on the web of newsprint which is about 0.003 in. thick, the fluid ink sinks into the porous paper much like writing fluid sinks into blotting paper or is absorbed by it, with the difference that standard oil-base news ink does not really dry but merely is absorbed by the paper.

While the ink maker has had numerous problems such as "strike-through" resulting from too free penetration, the most pressing general problem still to be solved is offset on the first impression.[1] The imperfections in first impression prints probably give rise to more complaints than any other blemish in newspaper printing. Experts are agreed that while paper, blanket surfaces, cylinder circumferences, the openness or density of the printing surface of the plate, tension control and holding the first impression prints in register with the offset on the second impression all may have influence, the principal cause of the trouble is lack of an ink to meet the demand for *instant* setting or setting and drying.

It is realized that an ink is required that virtually will stick to the web but not to the press blanket. A blanket that would repel ink and a web of paper that would only absorb ink and not part with it to the blanket under impression are desirable but not yet attained, so the search continues for an ink that will solve this problem. It may be that the presses will have to be partly altered to permit the use of new types of ink. Much research and experiment in news ink has engaged the attention of the ink makers but the very low price of this ink is a handicap.

Ink Dries by Oxidation and Absorption

As used in letterpress printing in platen, cylinder and rotary presses, and in offset-lith printing presses.

INKS on a drying oil basis are in general use in the letterpress and lithographic processes. The commercial printer encounters many different printing surfaces, ranging from absorbent paper like news print to impermeable materials like foil, cellophane, celluloid, metal and glass. On absorptive paper drying may be by penetration and oxidation but on the impermeable surfaces drying is by oxidation.

Practically every paper is influenced by a half dozen factors affecting its acceptance of ink: treatment of the pulp in the beater, sizing, loading, finishing, the printing ink and the atmospheric conditions in the pressroom. It is often difficult to anticipate how a given paper will absorb or resist acceptance of ink.

Sizing is employed to join the fibers and thus give more solidity to the sheet and in writing papers to resist spreading of the writing fluid. Fine writings are tub sized with gelatin and most printing papers and cheaper writings with resin. While resin prevents writing fluid from spreading, it assists penetration of printing ink into paper, allowing a little to be received by the fibers. Most papers are loaded with clay which also increases the acceptance of printing ink but counteracting this to some extent is the calendering of the sheet to give it a more polished and less absorbent surface.

It is advisable for the printer to lean on the wider experience of the ink maker when not sure of the ink acceptance of a paper and the drying quality of the ink chosen for it. A well known example of the action of ink on two printing papers: dull coated paper and board require dull halftone ink for prompt drying against smudging. Regular halftone inks will not answer on dull coated stock yet the dull halftone ink works and dries nicely on enamel coated paper. Again, a good grade of job ink will not dry fast enough on certain plated papers, delivery would be delayed and other possible troubles arise because the ink is not of the very fast, hard drying type.

Most printing troubles, according to the records, occur from causes due to faulty ink drying. Chalking or powdering of the pigment on the surface of the paper generally occurs in a first down print, when an ink is printed directly on the blank paper. The vehicle separates to some extent from the pigment and filters too rapidly into the paper, leaving the pigment not securely joined to the paper and easily rubbed off. Or if not enough vehicle surrounds the pigment, the bond will be weak. Pigments prone to powder do not properly combine with the vehicle and so are ground into it with little bond. These pigments also are not readily wetted by the vehicle hence it is likely to penetrate the sheet and leave the pigment stranded on the surface. Insufficient drier, by permitting the ink to remain wet too long, increases this difficulty.

Too much drier can cause trouble by accelerating the drying rate so that a skin forms prematurely and, by barring oxygen, prevents the drying of the ink beneath.

In multicolor printing the drying time of the several inks must be calculated. If an ink is printed on another that has dried too hard, it may be found that the second ink will not take, not only because it can not penetrate but also because it cannot wet the first ink and so cannot hold on it. Unless one is familiar with both paper and ink used, it is quite important that the drying of the inks be tested. It may be found that inks dry so rapidly that the several colors must be superposed within two or three hours of the end of runs else the succeeding color will not dry properly and may be rubbed off.

Printing and lithographic inks of the oil-varnish base type are formulated to dry properly at sea level at 70 deg. F. but when exposed to diffuse light and dry air will dry at either moderately low or high temperatures (40 deg. F. and 125 deg. F.) but excessive humidity may retard or inhibit drying.

Some may wonder why ink dries differently at different times. Polymerization and oxidation constitute a chemical

[1]See May 1941 issue of *Printing Equipment Engineer* for article on Water-Base Carbon Inks for newspaper printing. See also *Velo Process in Newspaper Printing*, July 1940, and *Modifying Presses* by Harry W. Smith, jr., in September 1940 issue.

Keeping ipi in Touch

PREPARED BY INTERNATIONAL PRINTING INK DIVISION OF INTERCHEMICAL CORPORATION • JUNE, 1942

NEW NON-SCRATCH INK HERE WAR BLACK PRINTS BETTER

Improved Holdfast Halftone Black Uses New Ingredients, Prints Like Linseed Inks

Product of War Research Meets Today's Ink Needs

The Products Development Laboratory of International Printing Ink has produced a new non-scratch halftone black which meets today's raw material situation.

The limitations on two critical resin materials, Glycerol Pthalate and Phenolic, have made necessary a new study of the formulations for non-scratch halftone blacks. IPI Laboratories have been concentrating on the development of a new black which not only equals the non-scratch characteristics of the famous "Holdfast" inks, but in addition, print as cleanly as the better linseed oil inks.

Outstanding Characteristics

The result is the new "Holdfast-extra," a non-scratch ink which for the first time offers superior printing qualities. For years the printing ink industry has searched for a non-scratch ink which would print as well as the better conventional halftone blacks. "Holdfast-extra" is the answer.

The new "Holdfast-extra" not only meets war conditions but also possesses outstanding characteristics never before combined in one halftone black. For example:

"Holdfast-extra" halftone blacks are formulated from still relatively abundant materials, and therefore meet today's printing ink conditions. They use new ingredients.

They print sharply and cleanly. This is evident by comparing a print of these new blacks with the best black you are now using.

Chemical Ingenuity

They have the printing qualities of the better linseed oil inks, yet develop excellent non-scratch characteristics. The non-scratch results with these inks are slightly better than the so-called full non-scratch inks formerly made from resins which are now restricted. The new halftone blacks have excellent fountain flow and mobility.

The development of "Holdfast-extra" halftone black demonstrates the resourcefulness of the printing ink chemist. As in the past, he is meeting today's challenge by the exercise of ingenuity.

Under the stimulus of a war economy, the "essential" material may be replaced by a new material which does the job better. "Holdfast-extra" halftone black is an excellent example.

"Holdfast-extra" is correctly formulated in both red and green shades, for the more popular coated papers, including #1 and #4 enamel. "Holdfast-extra" produces extra results but does not bring an extra premium. It is priced within the range of conventional halftone blacks.

Write, phone or wire for a sample can and a demonstration in your own pressroom. Consult your phone book for the IPI branch nearest you or address International Printing Ink, 75 Varick Street, New York City, N. Y.

The signature in which this advertisement appears was printed with "Holdfast-extra"

Exhaustive comparative tests of "Holdfast-extra" with conventional blacks were made in the IPI Chicago Products Development Laboratory and in the New York Engineering Department. Ink technicians were amazed at the excellent printing qualities of the new ink. Non-scratch inks heretofore did not produce halftone printing equal to the results from the better linseed oil inks. ***Advertisement***

reaction, the speed of which is approximately double for every 20 deg. F. increase in temperature. This is why an ink dries fast on a warm, dry day and slowly on a cold, damp day unless drying is boosted with drier and artificial heat. Heat also drives moisture from the paper and reduces or thins the ink so that penetration is free and thus drying is accelerated.

An ever recurring question is what to do when it is found that the job has not dried properly after it is run. Often a job has been saved by running transparent varnish or tint of the hard-drying type over parts or all of the job that has not dried as it should.

On jobs where a heavy fold is necessary after printing, an ink that dries too hard may crack, especially if the stock lacks the proper moisture content. Sometimes a scoring stunt will save such a job. Scoring before printing is sometimes practicable but the best procedure is to use suitable ink.

Ink "Dries" by Cold-Set or Freezing Process

As used at present on high-speed rotary presses for printing on absorbent and non-absorbent papers mostly for publication work.

A RECENT development in a new type of ink is the "Velo" process which uses an ink that is solid at normal temperature but at somewhat higher temperature bodies properly for printing and on contact with the relatively cold paper freezes instantly to form a sharp, mar-resistant print. Unlike ordinary news ink, Velo ink does not dry by penetration or absorption but freezes on the top layer of the topmost fibers.

In a Brooklyn plant where *PM* is printed, Velo ink is melted in tanks from which it flows to the ink pumps and rails. Water heated to 245 deg. F. is circulated through jackets around the tank, pipes, pumps and rails and also through the ink drum and the plate cylinder. Plates with close ribs and shallow grooves between ribs are used for better heat conductivity. Immediately after printing, the web is passed over a cold water roller which produces a case-hardening effect on the ink, preparing it for the second impression (perfecting). The second impression blanket is sprayed with a fine emulsion to prevent the first impression print from adhering because of heat from plate cylinder when press is on slow motion or stopped. A special top blanket of finely woven cotton balloon cloth is used with Velo inks. Finally the web moves over another water-cooled pipe roller as rapid chilling sets the ink harder than slow cooling. Velo seems indifferent to the kind of paper on which it is applied as the prints appear much the same on absorbent and non-absorbent stock.

Ink "Dries" by Precipitation

As used in rotary and cylinder presses, at present principally on cartons, wrappers and bags.

THESE new moisture-set inks, at present sold under the name of "Vaposet" by one ink maker and as "Hydry" by another, hold promise of very interesting developments because of the economy and simplicity of the process coupled with other manifest advantages. While the use of heating units is eliminated, drying is practically instantaneous. The water in vapor form from a spray gun with special head for fine atomization or as steam is applied to the film of wet ink immediately after printing and the H_2O causes a thin, hard crust to form over the underlying part of the film which prevents offset during subsequent handling, stacking or rolling of the freshly inked sheets.

The new inks are made with special synthetic resins and practically odorless solvents of high boiling point. The resin although soluble in the solvent is rendered insoluble in a mixture of the solvent and a sufficient quantity of moisture.

The inks are distributed regularly on the press, at present with rubber or synthetic rollers. The new process is best suited to roll-feed printing although it is used with sheet-feed on cartons which are waxed.

The steam equipment varies to suit particular installations. One example is as follows: The press was fitted with steam bars consisting of two ⅛ in. pipes across the web. Holes were drilled in the pipes (approx. No. 60 drill diam., with the holes about ¼ in. apart. The pipes were placed across the web at a slight angle and from ½ in. to 2 in. above the web, the intake side about 2 in. higher than the outlet. About 8 in. to 10 in. of the pipe were left without holes and this undrilled section extended beyond the web. A pet-cock was placed at the end to draw off the condensation. Baffle plates were placed around the steam pipes to prevent the escape of steam into the room as it is essential that the steam be kept from the plate cylinder and ink system. Otherwise, the escaping moisture would dry the ink on both plates and rollers. Specially designed equipment is in process of development and will be offered to the trade when perfected.

The outstanding advantages of these moisture-set inks are said to be: Freedom from objectionable ink odors, exceptionally fast-drying even without the application of moisture, instantaneous setting under application of moisture, brilliance of color comparable to water colors, superior sealing on bread wrappers, paper milk bottles, butter cartons and similar containers can be printed, die-cut, stripped and glued in a continuous high speed operation, non-skinning so that they remain open on the press, that they may be given non-rub and non-scratch qualities and greater coverage is obtained due to thinner, non-penetrating films.

The new moisture-set inks are incompatible with ordinary inks and they cannot be used together where there is overprinting or trapping.

Ordinary driers, extenders, reducers, retarders and other compounds cannot be used to amend the new inks on the press. The proper solvents and other conditioners are supplied by the ink maker.

Because the inks are grease-repellent the press and printing plate must be absolutely clean so perfect wash-ups are required. Ordinary detergents such as gasoline and kerosene are useless. The ink maker can provide the proper detergent or recommend the correct formula.

While water may be used with ordinary non-offset spray equipment if special spray heads are substituted (of a type used in humidifying equipment) to obtain sufficiently fine water particles, high pressure steam is the ideal method of applying moisture and the nearer to dry steam, the better, because there will be less condensation.

Hot Wax Inks Also Dry By Precipitation

Wax-set inks belong in the class dried by precipitation. In this case, the precipitating agent being hot (liquid) paraffin instead of water. The freshly printed ink is immersed in the hot paraffin which acts to set the ink immediately.

Ink Dries by Evaporation of Low-boiling Solvent

As used in the rotogravure process for printing newspaper supplements, magazine and other long-run printing on roll-feed rotary presses.

WHILE fast ink drying has been a most pressing printing problem for some years, the newest process attacked it promptly and successfully and the success of rotogravure is largely tied in with its solution of the problem which fitted it for use on the fast runs of newspaper supplements, magazines and other big jobs. The fluid-like inks are applied to fill the cells of the printing plate and the surplus is removed by the doctor blade, leaving the top, non-printing surface of the plate free of ink. The process permits a very short travel of ink from the fountain and allowed the use of special inks with binders in the form of resins dissolved in volatile solvents. As no time is required for oxidation, the ink film is dry following evaporation of the solvent. Later on, the fountain was hermetically sealed, together with the part of the plate cylinder passing through it, so that a plate surface of only a few inches was exposed and this allowed the use of highly volatile solvents with consequent very rapid drying.

The enclosed fountain and fast evaporating inks placed rotogravure next to newspaper printing in speeds up to 1200

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ft. per min. The vehicle originally consisted of natural resins dissolved in xylol and naphtha, with gilsonite furnishing the well known brown. Today synthetic resins and nitrocellulose are dissolved in very low boiling solvents of fast evaporation rate such as ethyl acetate, mineral spirits, etc. Latest announced gravure ink permits reduction with straight petroleum hydrocarbons and contains no cellulose.

Aniline Inks

Letterpress aniline (spirit) inks also dry principally by evaporation although there is some penetration of the paper when its surface permits as with rotogravure inks. Aniline inks are used in the letterpress process in roll-feed rotary presses principally for printing wrappers and bags. For some years, a closed fountain and limited inking system had been used in aniline printing prior to its adoption by rotogravure. Aniline (coal tar dye) colors are dissolved in low-boiling solvents and a gum or resin is added to bind the film of ink on the paper. Some presses are fitted with pumps that add solvent to the fountain as the run proceeds.

Thus it may be seen that the many surface variants in paper make necessary a correct ink formula for each kind of paper, directly affecting the drying problem which becomes more important as the printing speed increases.

Polymerization and oxidation are accomplished by adding catalysts to the vehicle of the ink which help it to absorb oxygen more rapidly and change from a fluid-plastic to a solid. In this process there is an increase in size and rearrangement of the molecules with loss of liquid material but with increase in weight due to absorption of oxygen. The catalysts generally used, although various others have been tried, are compounds of lead, manganese and cobalt in the form of borates, linoleates, naphthenates, resinates and tungates. These driers are effective but experience is needed to so control the drying action that it does not start to solidify the ink in the container or prematurely affect the ink on the press so that it dries while running or when the press is stopped for an hour.

Quick Setting of Ink by Gelatin

Although ink begins to oxidize immediately after striking the paper, some time elapses before the film hardens. One problem was how to stack the sheets in a pile at delivery without offset, pending the hardening of the ink film. Gelation is one means employed. Ink is a plastic in the container after leaving the mill. It is converted into a fluid on the inking system of the press but may be so formulated that it will gel when it strikes the paper and thus be less likely to offset as the drying process proceeds.

The quick-setting ink, employing gelation, is best used on absorbent paper which assists the drying by penetration. If the quick-setting ink is used on a hard-surfaced paper, the penetration will be slight and as the ink is not formulated to give a film of the non-scratch type, it may easily be rubbed off.

Ink Dries by Evaporation of High-boiling Solvent

As used in heat-set letterpress printing ink—Mostly used on roll-feed rotary presses for magazine and other long-run jobs.

EVER since the trend to roll-feed rotary presses accelerated, the need of faster drying of ink increased in stress. First the traveling tympan or smudge web was tried. Then came the paraffin spray. Next fast drying Chinese wood (tung) oil was tried as the ink vehicle and the printed web underwent exposure to ozone but still drying remained too slow. Research and experiment finally developed a new type of ink called by tradename "Vaporin" or "Flashdri". Its use makes possible speed in printing on letterpress rotary machines equal to gravure printing speeds.

Inks of the Vaporin or Flashdri types consist of solutions of synthetic binders in solvents which do not evaporate at pressroom temperature but volatize in a split second if exposed to high heat. The mechanical drying occurs when the web passes through an oven where rapid evaporation of solvent leaves the ink dry so that after the web has passed over a cooling roll, it may be backed up or perfected without smearing in a second or two after the printing of the first side. Heat is used in five different ways: Gas burners, steam drums, combination of heated drum and gas burner, with and without hot air and hot air alone, depending on the production requirements and the sort of work being printed. The printed web in one or more colors is entirely dry as it leaves the press and may immediately be cut, folded and bound. The first Vaporin inks dried flat but now may be had with brilliant finish and even gloss in single and multicolor. Development of Vaporin inks for flat-bed and other sheet-feed presses is in the formative stage. Heat used on flat-bed presses must be moderate to avoid burning the tapes so drying is not as rapid as on rotary machines.

Vaporin ink is widely used on the new machine-coated papers to produce four-color process printing on both sides of the web in a single operation at rotogravure speed as, for example, in the big mail order catalogues. There are other fields, in which long runs and high speed are favorable to gravure, wherein heat-drying inks enable letterpress to compete successfully.

Chairman of Clinic

Arthur W. Brooks, Production Manager of American Colortype Company, Chicago, will act as Chairman of the "New Materials and Methods under War Economy," clinic at the Craftsmen's International Convention in Grand Rapids, Mich., August 9-12.

Mr. Brooks' wide experience in the printing field especially fits him to direct this important Clinic dealing with things of utmost importance to printers in this day of critical shortages and priorities. Prior to joining the Colortype Organization three years ago Mr. Brooks was with the Rosenow Company for 15 years aiding in direct color photography, sheet fed gravure printing and creative advertising work in which that company pioneered. He is an active Craftsman and is first vice president of the Chicago Club.

Constructive Suggestions

A most constructive booklet is that entitled *Utilizing Salesmen in Wartime.* It has been published by G. M. Basford Company, Advertising and Marketing, 60 East 42nd St., New York, N. Y. The content of the booklet is devoted to suggestions from 60 companies telling how they are utilizing their salesmen under present conditions.

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WARTIME CONFERENCE

on Printing Education

THE first wartime conference on education for the graphic arts industries will be held in Pittsburgh, Pennsylvania, June 29, 30, July 1, under the joint auspices of the National Graphic Arts Education Association, Pittsburgh Public Schools, and the Carnegie Institute of Technology. This will be the twenty-first of the series of annual conferences on Printing Education.

The program is built around the general theme *Printing Education for Victory* and is planned to show the part that printing plays in national and international affairs, the types of basic courses of instruction best fitted for the times, and to point out the contributions the graphic arts and graphic arts education can and must offer to the war effort. The sessions will be held at the Carnegie Institute of Technology and the Clifford B. Connelley Vocational High School.

The special speakers, representing Government, education, industry, and religion, include:

E. W. Palmer, Assistant Chief, Printing and Publishing Branch, War Production Board, Washington, D. C.

Thomas Roy Jones, Member Advisory Board, War Labor Board; President American Type Founders, Inc.

Dr. G. D. Whitney, Superintendent of Pittsburgh Public Schools.

Dr. Robert E. Doherty, President, Carnegie Institute of Technology.

Dr. Webster N. Jones, Director, College of Engineering, Carnegie Institute of Technology.

C. B. Nash, Vice President, American Radiator and Standard Sanitary Corporation.

Harry L. Gage, Vice President, Mergenthaler Linotype Company.

George Welp, International Printing Ink Division, Interchemical Corporation.

Joseph Lasky, Author and Printer, New York.

The annual conference dinner meeting, devoted to the general theme, *Contributions of Graphic Arts and Graphic Arts Education to War Effort*, will be held at the Clifford B. Connelley Vocational High School on Tuesday evening, June 30. The conference proper, with prominent printing instructors and administrators taking part, will consist of *workshop* sessions covering Layout and Design, Proofreading and Copy Preparation, Type and Typography, Presswork, Standard Courses of Study, Demonstration of Teaching Methods and Graphic Arts Processes, and Student Club Activities.

The conference will be in general charge of the officers of the National Graphic Arts Education Association, consisting of President, Hupp E. Otto, Assistant Principal, McKinley Trade School, Wheeling, West Virginia; Vice President, Michael J. Eck, Supervisor of Printing Instruction, Public Schools of Cleveland, Ohio; Secretary, C. S. Romig, Printing Instructor, Senior High School, Altoona, Pennsylvania; Treasurer, Vincent C. Coyne, Printing Instructor, Middlesex County Vocational School, New Brunswick, New Jersey; and Fred J. Hartman, Educational Director, Washington, D. C.

The local chairmen of the various conference committees are: Program, Glen U. Cleeton, Head of the Department of Printing, Carnegie Institute of Technology; Annual Conference Dinner, Charles W. Pitkin, Carnegie Institute of Technology; Demonstrations and Displays, Dean W. Conner, Clifford B. Connelley Vocational High School; Registration, Stanley Hlasta, Carnegie Institute of Technology; Hotel Accommodations, George R. Deuel, Herron Hill Junior High School; Publicity, W. Clark Hagan, Gladstone Junior High School; Trips and Entertainment, J. Orville Wood, South Hills High School.

All sessions of the conference will be open to printers, school people, and others interested in graphic arts education.

Reception Room for Callers—*The Timken Roller Bearing Company, Canton, Ohio, has just completed a new reception room. During the present emergency, callers increased to approximately 2000 a month. The lobby finished in pin oak, is 40 ft. by 40 ft., with concealed lighting and heating. Three built-in, permanent display cases exhibit the company's alloy steel, tapered roller bearings and removable rock bit products.*

Government regulations state that visitors who are not American citizens may not be admitted to factories or offices of companies engaged in defense work so Timken added two private interviewing rooms where business may be transacted. By use of standard register continuous forms covering certain information, the visitor usually gets to his interview in three or four minutes.

Co-Chairman of Typographic Clinic

Glenn Pagett, president of Indianapolis Club of Printing House Craftsmen and typographic layout man for Typographic Service Company, Indianapolis, will act with Howard N. King of Intertype Corporation as co-chairman of the Clinic on Typography and Design at the International Convention of Printing House Craftsmen to be held in Grand Rapids, Mich., August 9-12.

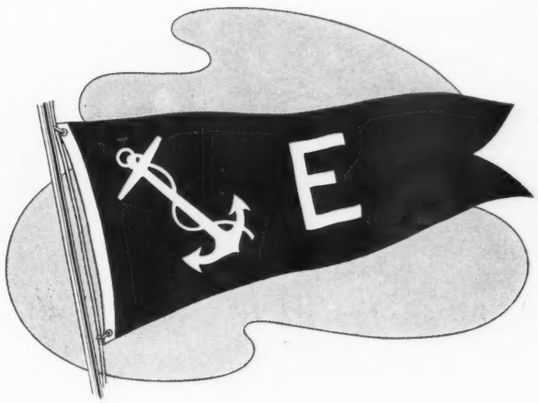
He is deeply interested in the design and production of fine typography and as a hobby has adapted the slide rule to problems of copy fitting and layout. He is a member of Typocrafters, a group of midwestern typographic men who meet informally each year to discuss trends in typographic art.

Now Flying All-Navy 'E' Burgee

The Goss Printing Press Company is now flying the All-Navy 'E' burgee, a swallow - tailed pennant bearing the famous 'E' and the Navy's "fouled anchor." This is in accordance with a new plan of the Navy Board for Production Awards, whereby industrial firms selected to receive the Navy's highest token of commendation are authorized to signify the fact by flying the All-Navy burgee, which has become the senior emblem and replaces the Bureau of Ordnance flag and old style 'E' pennant at plants that received the award prior to January, 1942.

The All-Navy burgee represents all Bureaus of the Navy and according to the current plan, carries more significance than awards made through individual Navy Bureaus.

Industrial firms receiving the Navy 'E' are entitled to fly the burgee for six months from the date of the original award. At the expiration of this period, the firm's record of performance is reviewed; and if it is found that the renewal of the honor is justified, the firm is awarded a white star to be affixed to the burgee as evidence of continued outstanding service.



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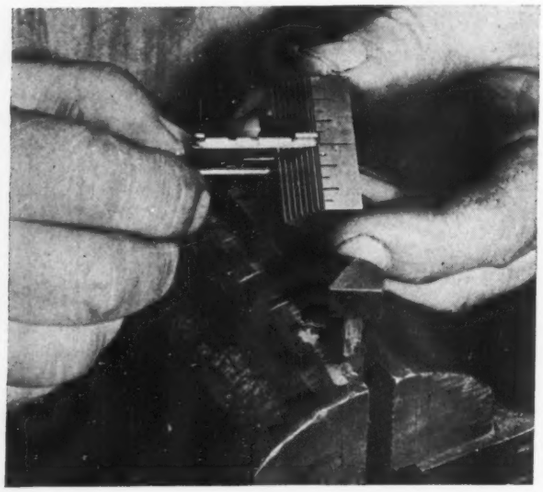

Fig. 1—This little graduated and hardened steel taper bar is a useful gauge for testing the correct spacing between the teeth of a matrix. The bar, however, should be obtained from a reliable source of supply. When the matrix binds at the center mark, the tooth spacing supposedly is correct. However, like micrometer calipers, allowance may have to be made for incorrect gauge thickness at the center line, by using the first gauge line at either side of the center line.

Line-composing Machine

Matrix Care

By STAFF WRITER

THERE is now every reason for keeping line-composing machines in first class operating condition rather than to depend upon the introduction of new matrices to replace those rendered unfit because of faulty machine maintenance and handling. In the first place, because of our present uneconomic condition, matrices may be hard to get, and in the next place, if sufficient matrices are not

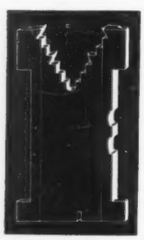

Fig. 2A—The combination teeth of this matrix were damaged during an incomplete second elevator transfer, the matrix not having cleared the first elevator jaw; sometimes this damage can occur in the distributor through wilful forcing.

furnished with which the operator can turn out a good day's work, composition costs may be increased considerably. This discussion deals only with the handling of matrices damaged by machines which do not receive proper maintenance care, or because of extreme wear in the matrix lugs. Ordinary repair operations, such as dressing burrs from lugs and the like, are not discussed in this article.

Matrix Activity

To demonstrate to you the importance of keeping a full complement of matrices in each channel, especially with refer-

Fig. 2B—The combination teeth at the right have been forcibly broken off by imperfect second elevator transfer. Such matrices must be discarded.

ence to the principally used lower case characters, let's lead off by stating that the average line-composing machine lower case matrix leads an extremely active production life. You may say: "Matrices are built to lead just that kind

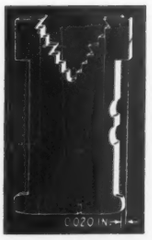

Fig. 2C—The lower back lug of this matrix has become worn to the extent of 0.020 in. and should be discarded. In certain cases, the lug can be swaged out to original size with the die shown in Fig. 4. If such a matrix has had a long and useful life, it has served its purpose, but under present conditions, it may be necessary to attempt to extend its operating life still further.

of life—so what?" Well, let's take the case of the lower case "e" matrix which is the most used character in the alphabet. We will assume that the operator of a machine is producing 1500 lines of straight composition per shift. The machine is operated two shifts per day. Each line contains an average of five lower case "e" characters; the lower case "e" channel contains 20 matrices. Each of the lower case "e" matrices will circulate through the machine 375 times during each shift, or 750 times for two shifts, or 4500 times per six two-shift working days. This is normal operation in the production life of lower case "e" matrices. No one would assert that the other lower case matrices receive as much use. They can't because they're not used as often—but the wear is relative according to frequency of use.

Now, let's get at the abnormally shortened production life of the lower case

Abnormal Matrix Damage

1.—*Sprung Upper Lug or Lugs.* The effect here is that the matrix tooth recess will be too wide so that the matrix either will fall from one of the toothed bars or will travel at an angle across the distributor bar. In the latter case, the matrix will fall from the bar one channel too soon or will be deposited flatwise on the top of the magazine channel entrance partitions.

Cause.—The cause of sprung upper lugs is that the matrix has been damaged by twisting or being forced during the second elevator transfer, or because the transfer has not been completed, or during transfer from the distributor box rails to the distributor box bar when not in alignment.

Remedy.—Place the upper lugs of the matrix between bench vise jaws to spring the ears together without bending them sidewise out of line with the matrix body. Then slide the matrix by its teeth on to a tapered gauge as shown in Fig. 2. It may be necessary to repeat the process. After the right distance has been secured between the combination teeth, dress out the tooth blanks with a square safe-edge file. Now inspect and adjust the transfer points to avoid further damage of this type.

2.—*Worn Combination Teeth.* Same effect as explained in 1.

3.—*Broken and/or Bent Combination Teeth.* See Fig. 2A-B; see also Fig. 3. It is obvious that broken-off combination teeth will make the matrix useless. Such matrices will fall off one of the toothed bars or cannot be supported properly by the distributor rail.

Cause.—Misaligned bars together with manual forcing sometimes cause tooth stock to be removed, or the teeth will be bent. There isn't any reasonable justification for frequent damage of this type.

Remedy.—There is no remedy for broken-off matrix combination teeth. Such matrices should be discarded. In many cases, bent combination teeth may be straightened out again by holding the toothed section of the matrix over a small anvil, such as is shown in Fig. 3. The teeth can be leveled out with a small hammer. If the teeth are curled upwards slightly (in relation to the body of the matrix), hold each tooth successively against the tapered section of the anvil so that the matrix body will be at right angles with the anvil itself. Then tap the bottom of the matrix carefully with the hammer to bring each tooth into line again.

4.—The lower back matrix lug seems to be subject to greater wear than any of the other lugs, partly because it is only half as long as the two upper lugs; partly because it must take up the shock or impact against the weight of the matrix body when coming to rest in the assembling elevator, and there is a sliding contact in the magazine channel entrance, the magazine channel and in the assembler entrance. This lower back lug also must take its proportionate share of frictional wear in the casting operation and when being lifted from the distributor box into the distributor screws.

Irrespective of letter character alignment, the first effects of a worn lower back lug will be evident when clogs occur in the magazine channel entrance. Another evidence of an extremely worn lower back lug is when there will be a tendency for the matrix to "jump the track" immediately above the magazine escapement verge, or two matrices will overlap or impinge at this point, causing non-response of the matrix.

Just *when* such matrices should be removed from the machine is problematical for the simple reason that the state of wear in the magazine entrance or in the region around the escapement verges are not alike in every machine. A matrix with a lower back lug worn to the extent of 0.015 in. will not operate in some machines but will give satisfactory service in another. It is safe to state, however, that when the lower back lug has worn down 0.020 in. it is time to discard the matrix.

Whether or not the lower back lug can be restored to serviceable condition by swaging out the lug with the die shown in Fig. 1 will be dependent upon the *thickness* of the lug after it has been swaged. If the lug is too thin after swaging, the lug may cause clogging by attempted doubling up in the channel entrance or perhaps impingement with another matrix in the magazine channel just above the escapement verge points.

TIME *Marches On*

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Fig. 3.

Fig. 4—This line-composing machine matrix ear swaging die block measures 3 15/16 in. wide by 2 in. by 1 3/16 in. high. This tool, developed by the late William Reid[1] is useful for restoring the lower front and back lugs, or "ears" of line-composing machine matrices to original outside dimension after wear has taken place in the lugs because of long use. Within certain limitations and when used intelligently, the matrix swaging die is a valuable tool. The two side plates which hold the matrix are of hardened steel. Embedded in the surface of the block immediately underneath the position occupied by each of the lower lugs of the matrix is a 1/4 in. diam. hardened steel plug. These plugs take up the shock of the impact when a lug is struck with a hammer and the punch shown in the illustration. A plunger protruding from the underneath surface of the block and connected with an ejecting plate immediately underneath the matrix body may be pressed to raise the matrix from the die.

When using this die, it should be remembered that after a matrix lug has been swaged its thickness will be reduced somewhat. In many cases the thickness of the lug will have been reduced by the swaging operation to such an extent that the matrix will be unfit for further use. The reason for this is that when matrix lugs have been made too thin either by swaging or filing, the lugs will overlap in the magazine channel and cause non-response.

The form of matrix lug swaging die illustrated here is the only one that will preserve letter character alignment after the swaging operation. The reason is obvious: The side plates hold the matrix securely at four *points during the swaging operation. Obviously, the swaging of matrix lugs without the use of a die will cause the letter characters to cast out of alignment with the letter characters in the line.*

[1]William Reid Company, 2271 Clybourn Ave., Chicago, Illinois.

Matrix Economy

Buy full matrix fonts. It is false economy to buy "short" fonts, i.e., *fonts with 15, 16 or 17 matrices only in each of the principally used channels. When you buy "short" fonts, you may save a little money temporarily, but you also accelerate matrix lug wear rapidly. It is apparent that when the principal lower case channels should contain 20 matrices each and you have anywhere from 15 to 17 matrices in those channels the circulation of the fewer matrices through the machine is greatly multiplied and the wear on the matrix lugs is greatly increased.*

Keep the 20-matrix channels filled with 20 matrices at all times by sorting those channels at regular intervals.

Go over damaged matrices regularly. Return the repairable ones to the machines after they have been repaired and discard those which cannot be repaired.

Keep a watchful eye on the various matrix transfer adjustments, the assembler entrance covers, the assembler parts and the buffer pieces in the assembling elevator and the forward thrust of the mold disk adjustment.

Get the cooperation of the operators so they will pick up immediately any matrices falling to the floor.

The machinist should maintain vise automatic, vise jaw and assembler em length adjustments for safety's sake and the operator should not tempt the function of the vise automatic on one-spaceband-line composition. Cooperation here will reduce matrix damage importantly.

"e" matrix. It isn't true that in every composing machine a full complement of 20 matrices is maintained in the most used lower case channels. More than likely there are only 17 lower case "e" matrices in the magazine, in which case each lower case "e" matrix is used, not 375 times per shift, but its activity rate is accelerated to approximately 441 times per shift; 881 complete circulations through the machine per day, or a total of 5286 for the week!

Thus it will be seen that the lower case "e" matrices, when the channel contains but 17 matrices, is subject to approx. 17% greater activity than when a full channel of 20 matrices is maintained. In its normal cycle through the machine, the lower lugs of each matrix are subjected to approximately 12 impacts or sliding motions. With only 17 matrices in the channel it will be readily apparent that the wear on the matrix is accelerated greatly because of greater frequency of use.

No Extra Stock for Repairs

At the time of receiving a new matrix, it should be remembered that all stock not pertinent to operation of the matrix during a long and useful life has been removed by the manufacturer. In other words, when thinking of a matrix in terms of how it can be repaired, there just isn't much if any "fat in the camel's hump" which will permit extensive re-

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pair operations once the matrix has become worn from use. Thus it will be seen that most matrix repair operations are merely of the palliative sort.

While *Printing Equipment Engineer* doesn't pretend to speak for the manufacturer, yet we would be willing to wager he is more concerned that you get the normal life expectancy out of each matrix than he is about furnishing new matrix replacements necessitated by faulty machine maintenance. We don't want to be accused of preaching to you, but it should be obvious that matrix manufacturers have spent a great deal of time and money in machine design and matrix performance so that you can obtain maximum production life from both.

Repairing Matrices

As has been stated before in *Printing Equipment Engineer*, repairing damaged or worn matrices in many instances is a doubtful procedure, but under present conditions it may be necessary to attempt repairing them wherever possible, irrespective of the economy involved. It may not be possible to secure new replacement matrices promptly. In some instances, delivery date of sorts matrices may be delayed to such an extent that production is reduced seriously.

The number of matrices that can be put into serviceable condition after removal from the machine will be influenced by the maintenance care bestowed upon the plant by the machinist. Before the present emergency struck us, the amount of damaged matrices accumulating from a battery of machines in many plants was dependent upon the time available to the machinist to keep his machines in such condition as to permit minimum destruction of the vital parts of matrices.

In some composing rooms it has been considered cheaper to buy replacement matrices than to spend the necessary time in attempting to put them in serviceable condition again. In these particular plants a minimum machinist force has been maintained.

Now, however, it seems the time is here when it will be necessary to try to repair matrices, whether or not it will pay to do so when judged by normal times.

No Substitute for Machine Maintenance

The best plan with respect to repairing damaged or worn line-composing machine matrices, of course, is to provide the necessary maintenance assistance so that damage to matrices and machine parts will be held down to the minimum. The quantity of *damaged* matrices accumulating from a battery of line-composing machines is definite indication as to the maintenance care given to the machines. It is admitted that even in well maintained composing machine plants damage does occur to matrices occasionally, but the number of matrices so damaged is held to the minimum, hence little time is required to fix up the matrices and return them to the machines, or discard them because they cannot be restored to workable shape.

LETTERS
TO THE EDITOR

Printing Gets Things Done

Dear Editor:

Half of the work of registration for sugar rationing could have been saved, and can be saved in future registrations. The number of errors also can be reduced.

In the method used, two individual records were made. The user gets one—the War Ration Book—while the separately filled out record goes to the Price Administration.

Not only does a separate copy have to be made now, but also the number of the Ration Book has to be copied. This makes additional errors and omissions possible. The writer knows of such instances.

All needless copying duplication could be eliminated by skillful planning and the easy use of carbon paper. Every Ration Book originally should have a stub so folded that by placing a carbon paper between the original and the stub-copy all recording will be duplicated automatically. The stub-copy kept by the Price Administration should have the same number printed on it as the original, thus saving the time of copying and eliminating the additional chances of error.

If we consider that at least one hundred million Ration Books were issued by our patriotic teachers, it means that at least two hundred million records had to be made. Thus, twice the time had to be spent by the patient public and the still more patient teachers, while the carefully written records were primitively duplicated. What a waste!

—DAVID REISZ

VALUABLE DOCUMENT

for Newspaper Executives

THE officers of the New England Newspaper Mechanical Conference are to be congratulated upon publishing the complete proceedings of its last meeting in Boston. The report consists of 56 pages and cover, 6 in. by 9 in. size. We understand the proceedings were published on a purely voluntary basis. Included with the clinic discussions is a complete reprint of the address delivered by General Mechanical Superintendent John J. Shea of the Hearst Newspapers. The title of his talk is *Progress in Newspaper Production*. In this talk, Mr. Shea covered technological progress in the newspaper printing industry from 1925 up until the time of the Boston Conference (October, 1941).

It is evidenced in the report that when technical men get together there can be no general agreement upon certain subjects. In other instances, several executives may discuss a subject without supplying the sought-for solution. Since these discussions have been provided in permanent form by the New England Conference, it is possible for an executive to start a new train of thought for the simple reason that he can avoid attempting to find solutions for problems reported as being ineffectual.

In reading over the report, too, one gathers that because of the variety and difference in design of equipment, there can be no universal answer to many problems. However, specific answers to problems about the manipulation of certain equipment are given. These answers should be valuable to executives supervising the equipment under discussion.

We believe it is the plan of the New England Mechanical Conference officers to bring before this year's conference in Boston some of the questions which were not answered satisfactorily at the 1941 meeting.

An innovation at this year's conference will consist of a separate clinic meeting for the composing room machinists. We are glad to note it is recognized the machinists do have problems which need group discussion. The composing room executives in particular will reap the benefit of the knowledge brought back home by the machinists who participate in this clinic.

Principal officers of the New England Mechanical Conference are: President, B. F. Garrity, Production Manager, Hartford (Conn.) *Times;* Vice President, Herbert T. Stanger, Production Manager of the *Christian Science Monitor*, Boston; Secretary-Treasurer, Walter C. Crighton, Composing Room Superintendent, New London (Conn.) *Day*.

Conference Postponed

It has been announced by Secretary-Manager Walter C. Johnson of the Southern Newspaper Publishers Association, Times Building, Chattanooga, Tenn., that the Mechanical Conference for the Eastern Division of that association has been postponed indefinitely. The conference was to have been held in New Orleans, La., on Aug. 31, Sept. 1-2. Composing Room Superintendent Claude Baker of the New Orleans *Times-Picayune* and *States* remains as chairman of the mechanical committee. The membership of the committee also remains intact.

PRINTING PATENTS REPORT

Covering Patents Issued April 28, May 5, May 12, May 19

This data is compiled exclusively for *Printing Equipment Engineer* by Invention, Inc., is verified in the United States Patent Office, and is comprehensive of all patents in the field of each heading for the dates specified.

For copies of patents listed here, specify the patent numbers and send 10c each (stamps not accepted) to the Commissioner of Patents, Washington, D. C.

Binding, Cutting, Perforating:

2,280,963. APPARATUS FOR A VARIETY OF GATHERING PURPOSES ordinarily encountered in a book assembling establishment. In the present invention, the supply sheets are mounted on a central table and are withdrawn by operators stationed about the table and dropped into collecting trays rotating between the operators and the central supply source. Invented by Norman D. Mitchell, Park Ridge, Ill. Unassigned. Application August 23, 1941. 12 claims.

Composing Room Equipment:

2,281,259. TYPOGRAPHICAL MACHINE of the type wherein circulating character bearing matrices, stored in a grooved magazine and released in response to manipulation of a keyboard, are assembled in line. Invention provides an improved auxiliary matrix guide comprising a spring finger or blade consisting of a strip only partially severed out of the partition proper. The opening formed in the partition by the portion thus freed, enables the latter to be flexed back and forth freely at its joint with the partition. The opening also allows the freed portion to be depressed wholly within the planes of the sides of the partitions, whereby the entire width of the space therebetween is preserved for the passage of matrices. Invented by John W. Bittner, Bellerose, N. Y. Assigned to Intertype Corp., Brooklyn, N. Y. Application May 23, 1941. 5 claims.

2,282,064. MACHINE FOR MITERING PRINTERS' RULES, having an improved carriage for holding the rule while it is being mitered. Instead of having the ordinary screw type clamp for holding the rule, the present clamp is spring operated, the operating knob merely being moved inwardly to allow the clamping portion to receive or release the rule. When the knob is returned to its original position, the rule will be securely held in place. Such a clamp may be more quickly operated than the screw type. Invented by William J. Knoll, Chicago, Ill. Assigned to H. B. Rouse & Co., Chicago, Ill. Application December 22, 1939. 5 claims.

Feeding, Folding, Delivery:

2,282,224. SHEET FEEDER of the type which feeds light weight stock efficiently, provided with a mechanism which also enables it to feed heavy or stiff stock. The feeder comprises a pair of spaced suction grippers arranged to grip the rear edge of a sheet and move it forward and a pair of spaced conveyor rollers to which the sheet is fed. The auxiliary mechanism comprises a pair of pushers, each associated with one of the suction means, and arranged to engage the rear edge of the sheet held by the suction gripper and push it forward into the conveyor rollers without slip of the suction grippers. Invented by Charles W. Harrold, University Heights, Ohio. Assigned to Harris-Seybold-Potter Co., Cleveland, Ohio. Application August 3, 1940. 5 claims.

2,283,255. PAPER CUTTING AND STACKING MECHANISM for a web cylinder lithographing or printing press, wherein the web is guided in its path toward the cutter by means of a flat plate against which the web is directed by a blast of air against the web surface. The air blast is directed against the upper surface of the web in the direction of motion of the web, so that the air blast has a brushing action which assists the web in its motion against the plate and maintains the web in a constant position as it advances toward the cutter, whereby the severed sheets are exactly uniform in width. An improved stacking mechanism is also provided, said to prevent the printed surfaces of the sheets from becoming smudged. Invented by Ray F. Holtz, Mount Lebanon, Pa. Assigned to The Lithograph Press Mfg. Co., Pittsburgh, Pa. Application August 1, 1940. 21 claims.

Miscellaneous:

2,281,909. PRINTING STENCIL FOR TEXTILES, comprising a foraminous screen formed from a synthetic fiber such as vinyl resin fabric and having a novel film cemented thereto, the film being formed from a composition containing 3 parts sperm oil, 1 part hydrogenated methyl abietate and 50 parts of a solution containing the following composition: ethyl cellulose 36; xylol 80; butyl acetate 35; butanol 15. The screen is suitable for printing on textiles with alkaline materials. Invented by George Barsky, New York, N. Y. and Frank A. Strauss, Staten Island, N. Y. Assigned to Alfred S. Daneman, Dayton, Ohio. Application March 26, 1940. 8 claims.

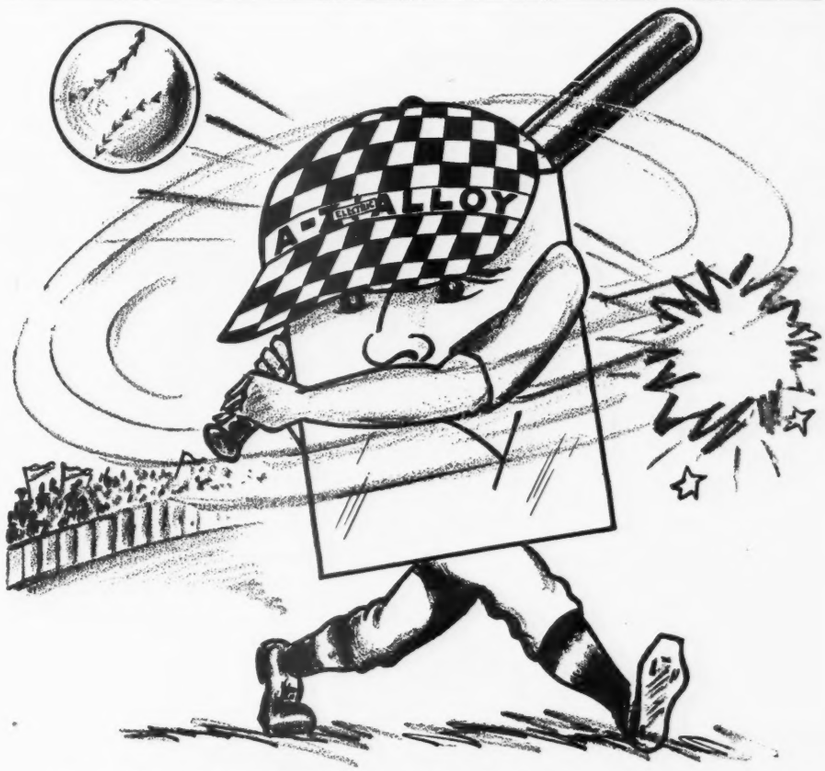
2,282,203 SCREEN STENCIL, constructed so that the fine lines of the design to be impressed are clearly defined and unbroken and the edges of larger areas are free for "saw-toothed" appearance. The stencil comprises a metal mesh fabric having an area of open mesh forming a design, the area being delimited by areas of solid sheet metal covering the fabric and filling the meshes where covered, the design comprising a band at least as narrow as the wires of the fabric. Passages lead from the bands around the wires and open at the opposite sides of the stencil. Invented by Edward O. Norris, Westport, Conn. Assigned to Edward O. Norris, Inc., New York, N. Y. Application January 31, 1941. 5 claims.

DESIGN 132,422. DESIGN FOR A FONT of new script type, similar to the cursives. Invented by Robert E. Smith, New York, N. Y. Assigned to American Type Founders, Inc., Elizabeth, N. J. Application March 20, 1942.

Plate Making:

2,280,985. IMPROVED PLANOGRAPHIC PRINTING PLATE. A waterproofed paper base is provided which resists stretching and separation of its fibers and which has on one side a water-receptive bonding sheet, capable of retaining in a suitably bonded condition a coating of a hydrophilic colloid of the character described in patent 2,230,987 (polyvinyl alcohol). Other synthetic hydrophilic resins may also be used. Base means without the coating comprises a substitute for a metal plate in an ungrained state. The combination of base means and the hydrophilic coating makes up a product which is a substitute for a metal plate having a lithographic grain. In-

(*Continued on Next Page*)

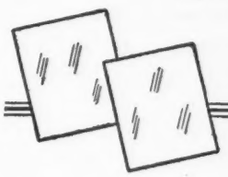


A Reliable PINCH HITTER

WHEN, as, and if the time comes that a pinch hitter is needed for copper engraving plates, remember to call on A-Z Alloy. This metal has an unusual record of past performance. It's toughness, quick clean etching qualities, and uniformity are recognized by big-league engravers everywhere.

The ability of A-Z Alloy to take fine screen halftones gives it a new importance at this time. This metal stands up under pressure and helps to keep your business in a scoring position.

You can order A-Z Alloy and Zomo Electric Zinc, plain or Backoted, from leading metal suppliers.



ZOMO ELECTRIC ZINC

A-Z ELECTRIC ALLOY

vented by William C. Toland and Ellis Bassist, Brookline, Mass. Assigned to William C. Toland, trustee. Application November 25, 1939. 10 claims.

2,280,986. PLANOGRAPHIC PRINTING PLATE with non-printing portions made up of novel combinations of materials which enable improved bonding of grease receptive colloidal printing portions to water receptive coatings on a lithographic support. Suspensions of the water repellent substances are incorporated with an aqueous suspension of hydrophilic material to provide the coating mixture. In mixing the two liquids, use is made of an emulsifying agent such as clay or other finely divided inert substance to secure intimate incorporation of the ingredients with one another, and to provide a coating mixture of uniform consistency adapted to be applied in a thin uniform film. Invented by William C. Toland and Ellis Bassist, Brookline, Mass. Assigned to William C. Toland, trustee. Application January 16, 1941. 14 claims.

2,282,448. PRINTING PLATE made from superpolyamides. It has been found that high molecular condensation or polymerization products of the polypeptide type, which are obtainable, for example, by heating omega. omega'-dicarboxylic acids together with omega.omega'-diamines or the corresponding salts thereof (adipic acid and hexamethylene diamine), or by heating omega-amino carboxylic acids or lactames, are excellent materials for printing plates and component parts therefor. Invented by Hans Beck, Ludwigshafen-on-the-Rhine and Walther Kuehne, Mannheim, Germany. Assigned by mesne assignments to E. I. du Pont de Nemours & Co., Wilmington, Del. Application January 22, 1940. 4 claims.

2,282,473. COPY CHARACTER HOLDER FOR ENGRAVING MACHINES, wherein the model is usually composed of a number of lines of copy letters arranged in predetermined juxtaposition to define a predetermined model which is traced by a stylus, the movement of the stylus being transmitted to a cutting tool. Invented by Jacob A. Hoffmann, Lyndhurst, N. J. Assigned to H. P. Preis, Engraving Machine Co., Newark, N. J. Application November 14, 1940. 6 claims.

Printing Presses and Equipment:

2,280,799. COMBINATION GRIPPING MEANS in conjunction with the blanket rolls of an offset printing press which combines both registration and delivery grippers. A chain gripping mechanism is provided in which the grippers follow the simple path of a single closed loop. The chains form a single loop extending around the blanket roll approaching it and departing from it on the same side of the press, i.e., the side at which the sheets are fed and delivered. As the chain delivery grippers approach the blanket roll and pass over it, the sheet is fed against registration stops on the blanket roll and the grippers (either on the chain or on the roll, or both) grip the sheet to hold it against the stops and thus insure accurate registration. As the sheet passes halfway around the roll, it is gripped or continues to be gripped by the grippers carried by the chain which draw it away from the roll to a delivery position, at which time the grippers are opened and the sheet is dropped on the stack. Invented by William W. Davidson, Evanston, Ill. Unassigned. Application October 3, 1939. 16 claims.

2,281,211. TEXTILE PRINTING APPARATUS, provided with a novel mechanism which will feed the fabric forward under uniform tension and at a uniform width in registration with the printing roll, so as to produce a uniform product. This is accomplished by applying tension to the fabric just prior to its entry in the printing zone and holding it under tension by a braking mechanism which tends to hold back the cloth as it is drawn forward by the printing machine. The braking mechanism preferably consist of a constant speed electric motor which drives the fabric at a rate of perhaps 75% of that at which the printer draws the fabric forward. The motor initially aids in moving the cloth when the machine is started, but when the cloth is moving at full speed, the motor is over driven, becomes a generator of electricity and so applies a counterforce tending to slow down the rate of cloth movement and keep it under uniform tension. Invented by Stephen B. Stafford, Oxford, Mass. Assigned to Rice Barton Corp., Worcester, Mass. Application October 20, 1939. 18 claims.

2,281,627. SPREADERS ARRANGED TO SMOOTH OUT CLOTH and control its location relative to a printing cylinder or other type of roll. (See patent 1,924,614 for printing rolls). A mount is provided which is substantially universal in its adjustment and which carries two spreaders which may be arranged in any desired angular position relative to the cloth and to each other. Either or both may be moved close to or away from the cloth and the backing cylinder of the printer, and the cloth may be passed over either one and under the other with a desired extent of surface contact and location relative to the cylinder. Invented by Herman A. Smith, Holden, Mass. Assigned to Rice Barton Corp., Worcester, Mass. Application August 15, 1940. 5 claims.

2,281,900. ROTARY INTAGLIO PRINTING MACHINE having electric motors for registering the form cylinders, including an improved arrangement of controls for the motors which prevent backward rotation of the cylinder while the printing machine is stopped and while a doctor blade is in contact with the cylinder. Provision is also made of a selector switch operative to permit either a limited or a continuous rotation of the cylinder by its registering motor when either a "forward" or a "reverse" control is operated while the machine is running. Invented by William C. Wieking, Woodhaven, N. Y. Assigned to R. Hoe & Co., Inc., New York, N. Y. Application January 12, 1940. 23 claims.

2,282,391. REEL MECHANISM for fast rotary printing presses having simple means for moving web rolls successively from the loading station to the idle station and thence to the web feeding station. The shaft carrying the pairs of web roll supporting arms is journaled to be axially movable for web registration and to be driven rotatively from time to time to advance the web rolls from one station to another. The invention includes novel intermittently operable driving means therefor. This means comprises, fixed to the shaft, a wheel which has peripheral teeth engaging with the inner face of an encircling spur gear ring so that the wheel and gear ring must rotate together. The shaft and its fixed wheel may move axially without passing out of mesh with the gear ring, the gear ring at the same time being held against axial movement. Invented by David G. Bernard, Chicago, Ill. Assigned to Goss Printing Press Co , Chicago, Ill. Application May 6, 1939. 7 claims.

2,282,655. INKING MECHANISM FOR ROTARY PRINTING MACHINES of the type including one or more rotary ink distributing cylinder cooperating with suitable ink rollers to work the ink into a uniform film before it is deposited onto the plate or form cylinder by rollers. In order to produce the best result, the inking cylinder should be reciprocated as well as rotated. Heretofore, cams, links, rocker arms etc. have been employed to reciprocate the ink cylinder. In the present invention, the rotary motion of the inking cylinder imparts rotary movement to an actuator provided with helical ribs or grooves which cooperably engage the rollers of the cylinder. This actuator is also provided with annular ribs or grooves which impart to the inking cylinder the desired reciprocatory motion. By means of the actuator, the inking cylinder is thereby reciprocated by its own rotary motion. Invented by William F. Huck, Richmond Hill, N. Y. Assigned to R. Hoe & Co., Inc., New York, N. Y. Application June 28, 1941. 17 claims.

2,283,003. ROTARY CYLINDER PRINTING PRESS of the kind used with delicate materials such as glassine, metal foils, cloth etc., which require quick drying inks and frequent stopping of the press to inspect the work. The press is provided with an improved throw out mechanism for simultaneously removing a plate or type cylinder from an impression cylinder and the sheet or web coacting with the latter, and the ink supply roll from the plate or type cylinder. The ink transfer rolls may be retained in operation even if the rotation of either cylinder is stopped. Improved multi-color registration mechanism is also provided. Invented by George O. Frostad and Raymond J. Nebel, Milwaukee, Wis. Assigned to C. B. Henschel Mfg. Co. Application May 13, 1940. 28 claims.

2,283,501. MULTI-COLOR ROTARY INTAGLIO PRESS having an improved drive and registering mechanism which imparts a more uniform speed to the web carried between the impression rollers and the printing or form cylinders of the machine and which registers the impressions printed by each unit more accurately with the impressions printed by another. Invented by William F. Huck, Richmond Hill, N. Y. Assigned to R. Hoe & Co., Inc., New York, N. Y. Application September 14, 1940. 16 claims.

2,283,587. METHOD OF REGISTERING SUPERIMPOSED PRINTINGS in a multi-color process involving the use of a number of master plates and electrotypes

TYPE METALS NEED "VITAMINS" TOO

Even the sturdiest of type metals cannot go on forever without a little encouragement. The endless round trips between the metal pot and melting furnace are bound to take a bit of starch out of the backbone of any metal. So, to keep its metals "in the pink," Blatchford maintains for its customers a testing and replacement service.

It works like this: The printer periodically sends a sample of his metal to Blatchford for analysis and a "health" report. If the metal isn't up to snuff, Blatchford prescribes the proper amount of toning metal to add in remelting.

It's a sure-fire way to keep the metal healthy — and the printer happy. Why not get the facts now?

E. W. BLATCHFORD CO., New York • NATIONAL LEAD CO., Chicago

LINOTYPE
MONOTYPE
INTERTYPE
LUDLOW
TYPE CASTER
STEREOTYPE

Blatchford METAL

Keep 'Em MOVING *and* CONSERVE METAL

INSTEAD of tying up much needed metal by holding old or idle engravings, electrotypes, stereotypes and type forms, KEEP 'EM MOVING!

You can contribute substantially to the drive for metal conservation by molding WOOD AD MATS from your old or idle plates and forms. Your Wood Mat facsimiles are ready for casting new stereotype plates at a minute's notice in the event of a re-run. Savings in storage space alone are certain to be worth while. Your original investment is protected. And in behalf of your industry, you are making a definite and valuable contribution to the war effort. Your country NEEDS metal. Look over your cut files NOW!

Remember — **WOOD AD MATS**

A Means for Metal Conservation

WOOD FLONG CORPORATION • Hoosick Falls, New York

New York City Office: 551 Fifth Avenue

made therefrom. Method consists in preparing an assembly plate provided with a system of coordinated equally spaced holes of uniform diameter. Reference points are marked on the master plates in a relation common to all of them. Holes are drilled in the electrotypes through the reference points corresponding to the reference points of the master plates. The electrotypes are placed on the assembly plate in predetermined positions corresponding to one of the master plates by registering the holes in the electrotype with a set of predetermined holes in the assembly plate. The electrotypes are secured to the assembly plate in these predetermined positions and this operation is repeated for each of the other master plates. Invented by Warner Steinbach, Maplewood, N. J. Unassigned. Application April 3, 1941. 7 claims.

2,283,597. HIGH SPEED MULTI-COLOR PRESS having an improved web directing and associating apparatus of sufficient operative flexibility to permit the printed webs to be delivered over formers, or to separate the webs into ribbons and guide them between or around spaced formers to associating mechanisms. The apparatus includes separate laterally movable formers, positioned side by side and turner bars located above the formers, so as to guide ribbons between or around the formers, to the associating locations. This eliminates the previous tendency of the multi-color impressions to smear as the web passes over the former. Invented by Herman P. Clauberg, Hasbrouck Heights, N. J. Assigned to R. Hoe & Co., Inc., New York, N. Y. Application October 15, 1940. 17 claims.

2,283,830. INK FOUNTAIN for a high speed rotary press, having a novel doctor blade which gives improved control of the ink supplied from the fountain. The doctor blade comprises a thin strip of springy metal which cooperates with the fountain roller and has a straight edge in contact or closely adjacent the roller. It is adjustable with respect to the roller at a number of points along its length so that the ink delivered from the fountain may be varied from column to column depending on the requirements of the plates. The blade is provided with a number of highly flexible portions which extend normal to the edge of the blade adjacent to the roller, so that the movement of one or more of the columnar sections of the blade toward or from the fountain roller does not affect the positions of the remainder of the blades, the movement between the various sections being taken care of by the flexible portions of the blade. Invented by Auburn Taylor, Charleston, W. Va. Assigned to The Goss Printing Press Co., Chicago, Ill. Application June 22, 1941. 9 claims.

For Patent Research in the U. S. Patent Office, or a prompt estimate on any type of search, address INVENTION, INC., Barrister Bldg., Washington, D. C.

Machinery Freezing Order Relaxed

THE Industrial Machinery General Limitation Order L-83, first promulgated by WPB under date of April 9, (see page 14, April *Printing Equipment Engineer*) has been amended to permit the sale of printing machinery which is in excess of five years old. Effective date of the Amended Order is May 18. The order, however, as first issued still applies to "printing and publishing machinery, on orders for a single new, or less than five-year-old reconditioned or used machine of a value in excess of $200." To obtain a new or used machine which is less than five years old and which is valued at more than $200, a printer or publisher must use Form PD-1-a for approval of the purchase by WPB.

While retaining rigid control over acceptance of orders and deliveries by manufacturers, distributors and all other persons of new, used and reconditioned machinery, the amended order permits production of new machinery for stock without authorization.

Stipulations of the Amended Order also apply to Auction Sales, as follows:

"Auction sales, sales pursuant to court order and similar transactions.—Dispositions of used critical industrial machinery at auction, at sheriff's sale, at tax sale, in liquidations of all or part of a business, and in similar transactions must be approved orders unless such dispositions are made to distributors within the limits specified in paragraph (b) (4) (vii)."

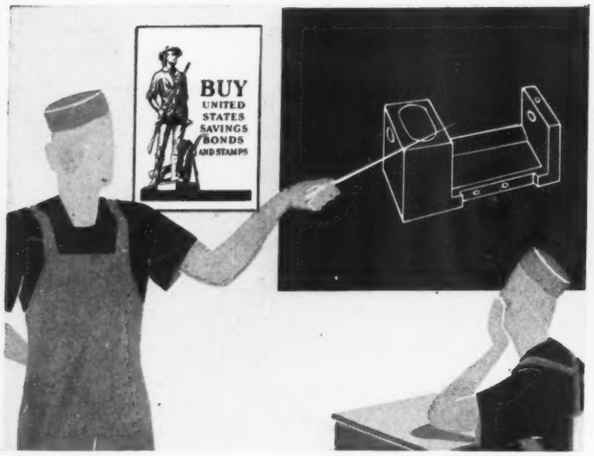
(Editor's Note. — Approved orders mentioned above include those for the Army and Navy and other Government Agencies, or orders bearing A-9 Preference Rating, or higher.)

The Amended Order L-83 contains eleven exempted transactions mostly dealing with transfers of used or reconditioned machinery. These are as follows:

Exempted Transactions. "Nothing in this order shall be construed to prohibit any of the following transactions:

"(I) Seizure of critical industrial machinery (but not subsequent disposition or use thereof) upon default, by any person pursuant to terms of a conditional sale agreement, chattel mortgage, pledge, or other security agreement; and the distraint or levy by execution (but not subsequent disposition thereof) by tax authorities.

"(II) Delivery or acquisition of criti-



The Kid Keeps Learning About
NUMBERING FOR PROFIT

- "What does the wall chart teach?"

  ★ "Keep buying War Savings Bonds every pay day."

- "Why?"

  ★ "To save our freedoms and our money."

- "Swell. How else can we save money?"

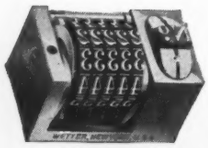
  ★ "Making equipment last, saving paper."

- "What's the wall chart teach?"

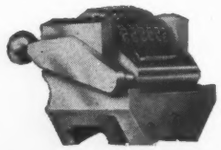
  ★ "Wetter Numbering Machines with a frame machined complete out of a single piece of steel last longest, print best, avoid rejections and so save paper."

- "Patriotic!"

  ★ "And profitable."



Wetter Lock-Wheel
One of many models



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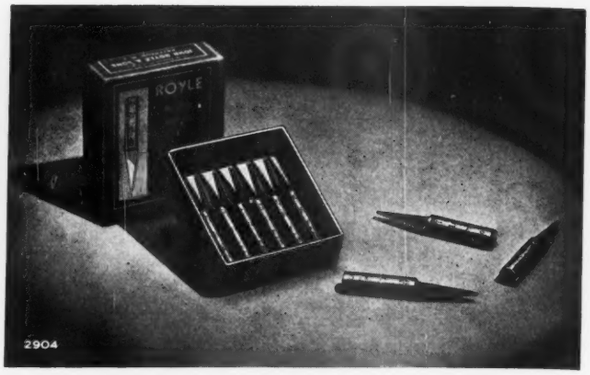

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H		Copper (Ground below center)
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cal industrial machinery (but not subsequent disposition thereof) through a transfer by will or intestacy, or a transfer by operation of law to a trustee, receiver, or assignee for the benefit of creditors, in bankruptcy, insolvency, receivership, or assignment for the benefit of creditors.

"(III) Delivery or acquisition of critical industrial machinery as part of a transaction, such as merger, consolidation, sale and purchase of assets, sale and purchase of stock, or lease of plant, involving the transfer of all or substantially all of the assets of an enterprise, where no liquidation or dismemberment of assets is contemplated.

"(IV) Transfer of critical industrial machinery, within a plant, or within a single corporate enterprise (including majority-owned subsidiaries), from one plant or branch to another: Provided, however, that nothing in this paragraph (IV) shall be construed to permit transfers from a portion of an enterprise manufacturing, building, or assembling new machinery to a portion using it.

"(V) Delivery or acquisition of critical industrial machinery (but not subsequent disposition thereof) as a trade-in, where the machinery to be installed is delivered pursuant to an approved order.

"(VI) Deliveries to, and acquisitions by, distributors, of new critical industrial machinery in the following two instances only:

"(a) To fill approved orders for new critical industrial machinery which orders are actually in the hands of such distributor; or

"(b) To replace new critical industrial machinery delivered in such distributor to fill an approved order.

"(VII) Deliveries to, and acquisitions by distributors of used critical industrial machinery (but not subsequent dispositions thereof) at auction, sheriff's sales, tax sales, liquidations or otherwise.

"(VIII) Subject to provisions of paragraph (c) [See paragraph (c) at end of article—Editor] delivery of critical industrial machinery for repair and return of a repaired machine, and the loan of a machine to the user, for a period not to exceed one month, pending the repair of the damaged machine.

"(IX) The delivery and acquisition of critical industrial machinery to be scrapped for its material content.

"(X) The unloading from a vessel of any imported critical industrial machinery.

"(XI) The transfer of any interest in

(*Continued on Page 78*)

National Executive Meeting Dates

American Photo-Engravers Association—Oct. 12, 13, 14, Netherland Plaza Hotel, Cincinnati, Ohio. Louis Flader, Commissioner, A-1446, 166 W. Van Buren St., Chicago, Ill.

A.N.P.A. Mechanical Conference—June 8, 9, 10, 1942—Hotel Drake, Chicago. W. E. Wines, Manager, A.N.P.A. Mechanical Dept., 370 Lexington Ave., New York, New York.

Illinois Newspaper Mechanical Conference—Ed Nagel, Secretary Champaign (Ill.) *News-Gazette.*

International Association of Electrotypers & Stereotypers, Inc.—A. P. Schloegel, Field Secy.-Treas., 949 Leader Bldg., Cleveland, O.

International Association of Printing House Craftsmen—August 9-12, 1942, Grand Rapids, Mich. Herbert Threlfall, International Secretary, 210 Lowell Ave., Providence, R. I.

International Trade Composition Association—Wm. E. Lickfield, Secretary, 629 Chestnut St., Philadelphia, Pa.

Iowa Daily Newspaper Mechanical Conference—Paul Kamler, Secretary, Clinton (Ia.) *Herald.*

Iowa Line-casting Machinists Conference—Carl Bloomburg, Chairman, c/o *Register* and *Tribune*, Des Moines, Ia.

National Association of Photo-Lithographers—July 23, 24, 25. Hotel Hollenden, Cleveland, Ohio. Walter E. Soderstrom, Executive Secretary, 1776 Broadway, New York, N. Y.

New England Newspaper Mechanical Conference—Second week-end, October 1942—Hotel Statler, Boston. Walter C. Crighton, Secretary, New London (Conn.) *Day.*

Northwest Newspaper Mechanical Conference—1943 meeting to be announced. V. G. Eck, Secretary-Treasurer, Dunwoody Institute, Minneapolis, Minn.

New York State Newspaper Mechanical Research Conference—February meeting postponed indefinitely. Byron G. Culver, General Chairman, c/o Rochester Athenaeum and Mechanics Institute, Rochester, N. Y.

Pacific-Southwest Mechanical Conference—April, 1943, Los Angeles, California. Fred J. Moyer, Secretary, c/o Los Angeles *Daily News.*

S.N.P.A. Eastern Div. Mechanical Conference—August-September meeting postponed indefinitely. Walter C. Johnson, Secy.-Mgr., P. O. Box 1569, Chattanooga, Tenn.

S.N.P.A. Western Div. Mechanical Conference—February, 1942 meeting postponed indefinitely. C. W. Tabb, Secretary, 723 Texas Bank Bldg., Dallas, Tex.

United Typothetae of America—June 19-20, Hotel Carter, Cleveland, O.—Otis H. Johnson, President, 719 Fifteenth St., N. W., Washington, D. C.

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BALTIMORE CAMBRIDGE

MANY SUGGESTIONS

(Continued from Page 32)

able to buy them, so give the best possible care to the ones that are now doing your job.

Turn Off Motors and Lights When Not in Use

There appears to be an increasing need for conservation of electric power. Newspapers can help with this. Do not leave motors running on typesetting machines or other machines when the machine is not being used. Keep lights turned off when not in use. Check the possibility of saving electricity on metal pots heated by electricity. A recent release pertaining to Limitations Order L-94 contains the following: "In some areas shortages of electric power have already occurred, and in others further shortages are threatened. These shortages are generally caused by the vast increase in the use of electric power by the war industries . . ." This order contains the machinery for mandatory curtailment of power for commercial and industrial consumers and in homes should the occasion demand. This order will be applied to whatever localities it seems necessary, so particular attention to conservation of electricity in your city may prevent this regulation becoming effective there. Electricity is just another thing we need to make fighting equipment. A note, pointing out the necessity of this saving, posted in each department, should get the cooperation desired in this connection.

Fighting Forces Will Get Materials First

The War Production Board has one job to do first and that is to make every effort to conserve and provide materials necessary to the winning of the war. That is no small job but it is the number one job. While doing this the Board is also trying, so far as possible, to provide the necessary things to private industry and that includes newspapers. Whenever the war effort and private industry come into conflict in securing materials, you can be sure the materials will go to the fighting forces. Private industry will fare much better if every such industry will maintain the lowest minimum inventory of supplies. It is not patriotic to increase these inventories. There are no rules that will give you the information on just how many pounds of this or that you should have. You know more about your operation than someone on the outside and you know if your inventory is at the lowest minimum and you also know if it is excessive. You know if you are hoarding. I understand that there have been several instances where people seemingly did not know and it proved to be rather embarrassing to them. I am sure that newspapers will give full cooperation to the war effort in every way and they are going to depend upon you men to carry out many of the details in this connection. I am sure you can be depended upon to give this job the best that is in you.

Eliminate Non-Essential Services

As a further effort at conservation I would suggest that each mechanical department head be asked to list all the demands upon his deparrtment that in his opinion make for waste. Mechanical departments are service departments, giving service to the news and sales departments of the newspaper. We all know that these demands have increased. It is likely there was a good reason for the particular service at the time it was requested. It seems now is the time the non-essentials should be eliminated. If these lists, of what might be considered non-essentials, are turned over to the mechanical head, or proper person representing management in your plant, you are likely to find management more interested in considering suggestions of this kind now than it was at some previous time. It seems to me, too, that management should not consider such a move as a complaint, but rather the kind of cooperation that is timely and patriotic.

Conservation Committees

The Mechanical Superintendent of a large Eastern newspaper told me a few days ago about the work conservation committees had been doing in the plant where he is in charge. These committees are made up of employees in the different departments—men who under-

THE EVENING SUN
MORE U. S. TROOPS, PLANES, TANKS ARRIVE IN AU
THE CHRISTIAN SCIENCE MONITOR
Herald Tribune
60 to 70 More Japanese Troopships Nearing Java,
The New York Times.
JAPANESE REACH LASHIO IN BURMA, BRITISH AND CHINESE FACE A TRAP; R. A. F. POUNDS KIEL AND TRONDHEIM
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Good News TRAVELS FAST

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Again this year* users of Edes Zinc carried off top honors in the Annual Exhibition of Newspaper Typography. The necessity for wartime economy is partly responsible for the trend to Edes. But the essential fact is this: *Edes photo-engraving metals do the job better—produce prize-winning results at less cost.*

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stand the necessity of saving these materials. In most instances they have sons in the service. They are making it their business to get the cooperation of their fellow employees in this most patriotic effort. The work of the committee is very effective and worthwhile savings of materials have resulted. This is as important to the employee as it is to the employer, because both will win or lose together.

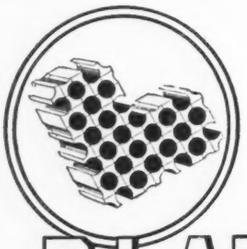
Praises Machinists' Clinic

It seems to me the composing room machinist clinics you are having in connection with the Iowa Mechanical meetings is a most worthy effort in the development methods of maintaining equipment. These meetings should result in a reduction of the amount of supplies and parts used for maintaining typesetting machines in your different plants. That accomplishment is a contribution to conservation of needed war materials.

Report Use of Substitutes to WPB

You may be doing some experimenting with substitutes in your plant. You may have put into effect some conservation measures that are getting results. Anything you have done in this connection is of interest to us in the newspaper section of the War Production Board. Write us or tell us about it, whatever it may be or regardless of how small a saving might have been accomplished. Small savings made in many plants result in a large saving. We will appreciate your cooperation.

I have mentioned but a few of the things that need our attention. All of you know waste when you see it. I think most every man working in your departments also recognize it. You, as department heads, have been so occupied with the problems of making editions on time, improving the appearance of the paper and other details of operation that you may have overlooked some of the things that contribute to waste. In many cases it has been an item that only you, the department head, had any particular responsibility for, or interest in. It seems that things should be different now. Every man and woman in your department should have the patriotic interest to do all they can for the conservation of materials their sons or brothers need on the fighting front. It is your job, and it is my job, to get over to each of them the importance of everyone taking part in this most worthy effort. Every loyal American citizen should want to make this contribution to victory.



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FOWL PLAY

(Continued from Page 42)

As Waterloo Watts came to the place in the copy reading ". . . black monster dropped a big sack over pretty Betty's head," Windy Bill raised the old Dominecker hen high above his head with both hands and brought the hen down on the keyboard in front of Mr. Waterloo Watts with a crash. Waterloo, the Dominecker hen and flying chicken feathers obscured the air for a few seconds.

Then the terrified yells of Mr. Watts could be heard above the excited squawks of the Dominecker, and with a last yell of fright, Waterloo rushed for the stairs and out into the safety of the street. Windy Bill, somewhat addled by the speed of events, reached down and snatched the handkerchief and fingernail polish, grabbed Beeswing by the arm and they skidded for home.

The next day when the day shift came to work and Windy Bill appeared at his bench, there was much curiosity among the men because they found an old setting hen, clucking away contentedly in a copy basket.

Many mats have passed under the roller since Waterloo Watts left the *Daily Record*, but even yet, Beeswing, sometimes called "Biddy" Billings, also known as the Silent One, sometimes flaps his hands on his sides and shouts "Cock-a-Doodle-Doo" in an effort to heckle the machinist.

But Windy Bill only smiles and thinks of his pet, and old Dominecker hen, which putters around his home. Around her neck she wears a silk handkerchief, and the monogram "W W" is curiously entwined in a lover's knot. Although she toils not, neither does she spin, she sometimes takes a few minutes out to admire her red toe nails.

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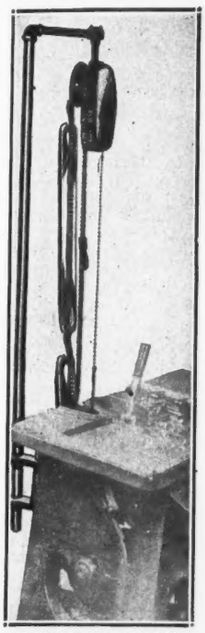


The Jordan Feeder
for the Linotype, Intertype, Monotype, Ludlow and Elrod. Constructed on the endless chain principle.

The Big Chief Remelter
for remelting type-metal by gas, electricity or coal. Capacities, 1200 lbs., 2400 lbs., 3200 lbs., 4800 lbs.

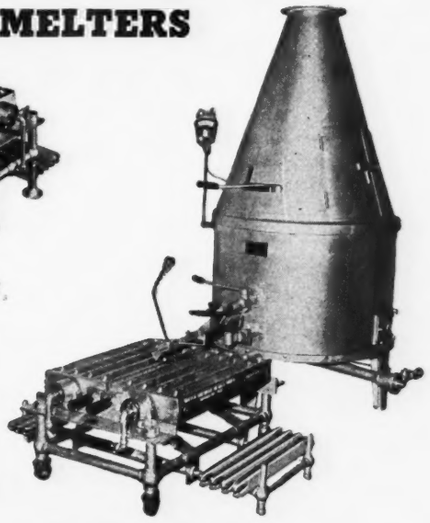
The Little Chief Remelter
Like father—like son. Can be operated in the composing-room if desired.

Both these Remelters reduce fuel cost by 30 to 50%

Twintype water-cooled Molds
Cavities above and below. These molds cast the Double-ear Slip-off ingots that drop off the hook automatically

WRITE FOR complete illustrated CATALOGUE

LITTLE CHIEF and BIG CHIEF REMELTERS



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UNITED AMERICAN

DOUBLE-EAR
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4815 32nd PLACE **LONG ISLAND CITY, N. Y.**

Silk Screen as used in connection with offset-lith and letterpress printing — Opaque qualities of silk screen process paint is ideal for transparent surfaces

By J. I. BIEGELEISEN*

*Production Manager, Paint Print Process, Inc., New York, N. Y.

Abstract of talk delivered before Litho Club of New York, March, 1942.

SILK screen has developed a technique of its own, excelling in flat color reproduction in limited quantities. It is a unique process because it is applicable to such diverse stocks and surfaces as metal, glass, wood, cloth, cork, linoleum, and foil papers, as well as to paper and cardboard. It can be used to print with inks, paints, enamels, dyers, lacquers, or any other viscous matter. Opaque or transparent inks or paints can be used. The stock can be of any thickness or weight, and of practically any size.

Such printing versatility is beyond the usual range of lithography and therefore the knowledge of silk screen now makes it possible for the Graphic Arts industry to handle work which heretofore was impossible, impractical, or unprofitable.

Silk screen is an extension of the field of printing beyond lithographic or letterpress work. Its possibilities can be made to serve lithography as it has served letterpress work. Silk screen is the method for overprinting on lithographed sheets for corrections and changes on previous printing copy. It pays to remember that opaque paints of any color can be screened directly on any background. It matters not at all if the background is black, gray, or metal foil. The thickness or the shape of the lithographed display which requires "doctoring" by silk screen is not important either. Even finished, die-cut displays, mounted, easled, and all can be registered and printed by this process.

Editor's Note—The use of the silk screen process in connection with letterpress and offset-lith printing processes is discussed by Mr. Biegeleisen in the accompanying article. Ways in which this can be done are suggested.

It is not reserved only for "covering up" jobs. It may be and is used a lot for short-run imprinting on lithographed work. The process speaks many tongues. In one Beech-Nut job several years ago, Arabic, Portuguese, German, Chinese, French and Hebrew copies (all saying the same thing about the product), were economically imprinted with light-colored opaque paint on a deep-colored lithographed background.

The opacity of silk screen process paint when applied by the stencil, is ideal for quantity printing on glass and other transparent surfaces, especially where the transparent display is to be held in front of a source of light. Complete obliteration of light is possible only with the silk screen process as the thickness of the coat of paint can be easily controlled with this method.

The thing to remember about silk screen is that it works on the principle of the stencil. This immediately brings to mind openings in a mask through which a viscous substance may be made to penetrate to a flat surface directly underneath it. This means that not only can we stencil paints of all kinds, but also varnish, glue, asphaltum or molasses if we so desired. As a matter of fact, a substance almost as sticky as molasses is

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The Rouse Economy Vertical Miterer will cut more than 700 miters an hour direct from strips. It has the same accuracy and ease of operation as the Master Model.
The Rouse Economy Vertical Miterer will prove the solution to the mitering problem in most plants. It is definitely a time saver.
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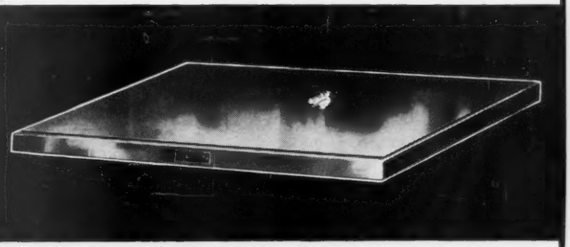

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302

used as a base medium for holding tinsel, flitter, cloth flock dust, sand, etc. While the print is wet, the dust (whichever it may be), is sprinkled over the design and is held in place by the adhesive. Here are some practical applications: Snow and glitter effect on cards and displays, cloth texture effect on fashion displays, asphaltum prints for subsequent etching, etc.

The silk screen process today is a perfected printing medium. When the design is created to be reproduced by silk screen the results are highly gratifying. The flat color, poster technique is ideally suited for this medium. Where the run is too small to warrant color separation and expensive color plates, or where the process can be used in conjunction with lithography, consider silk screen.

Don H. Taylor, executive vice president of New York Employing Printers Association, Inc., has been granted a leave of absence as of May 25. He will take up duties with the army in a civilian capacity pending being commissioned a major in the army, with assignment to active duty in the New York Ordnance District. Mr. Taylor formerly was a captain in the Ordnance Reserve attached to the New York District. He has been with the Association for twelve years.

Electric Heat for Paper Processing

The Standard Process Company, Chicago, has found thermostatically controlled electric heat, particularly suitable for applying thermoplastic solution (cellulose acetate) to paper—an operation which must take place at carefully controlled temperatures. This thermoplastic or "hot-melt," (known as Liquafilm) is used on labels, magazine covers, packages and candy box covers.

The cellulose acetate, which is applied at a temperature of 280 deg. F., is first heated to a temperature of 275 deg. F. in a tank equipped with six 1000 w. and seven 500 w. General Electric Calrod heaters. The thermoplastic is then drawn into another tank heated by seven 500 w. Calrod heaters to 280 deg. F. Both tanks are located at the bottom of the processing machine.

As the paper enters the machine, the coating is applied by a roll which is kept warm by a 250 w. heater. A blade warmed by a 500 w. heater "doctors" the roll. The paper is then contacted by two smoothing and glazing blades, each heated by a 3000 w. heater.

View in one corner of production department, Standard Process Co., Chicago. In this machine cook book covers are being coated with Liquafilm (cellulose acetate). Coating is applied by a heated roll. Paper then is contacted by two smoothing and glazing blades, all controlled to proper heat by G-E Calrod electric heating elements.

PRESSROOM SUGGESTIONS

By HERMAN A. SLATER

TO remove spray from composition rollers, take a wiping cloth and wet it thoroughly with water, then pour gasoline on the wet cloth and rub the roller briskly. The gasoline tends to "neutralize" the water, which in turn prevents the roller from becoming pitted.

A "stock" compound made up of 1 pt. of gloss varnish (not overprint varnish), ½ pt. kerosene and 1 oz. of cobalt drier when added to gloss ink (about 1 oz. to a pound of ink), will give at least 25% more gloss on cheaper papers.

To "cure" waterlogged or badly dried out composition rollers, coat with a heavy film of wool grease (which can be supplied by any ink house), and store in a cool, dry place for several days.

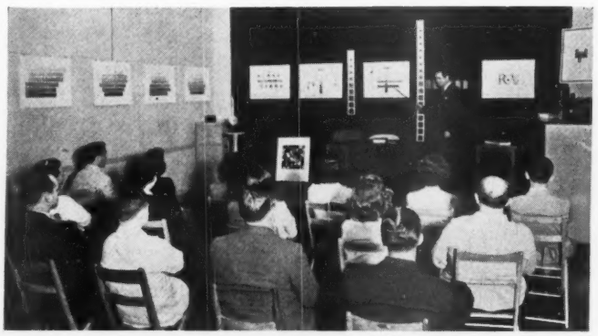
To prevent rubber hose from becoming oil soaked paint the hose, including the ends, with lacquer or other fast drying paint. This will stop hose from swelling also and will save on rubber hose up to 200%.

When starting a gloss ink job never "ink up from the fountain" as such a small amount of ink is sent to the form rollers with each turn of the fountain that the ink will oxidize before it is properly distributed. Use the knife to ink up with and put the gloss ink back as close as possible to the form rollers. A flit gun with kerosene, is a good medium to prevent gloss ink from drying on the press. Press should be sprayed while in motion after each stop.

Technically, press wrinkles are caused by the sheet being longer on the ends than it is in the middle. There are dozens of ideas on how to get rid of a wrinkle but they all lead back to the "shortening" of the sheet on the ends so the sheet will be the same size the entire length.

Mineral or machine oil rubbed on the inside of the paste jar or can will help to prevent paste from drying up around the sides of the container.

The Cambridge office of International Printing Ink has donated the use of its Color Room to the State of Massachusetts Monday nights to provide a classroom for some fifteen students of color. These facilities give the students an understanding of color relationship and nomenclature. All materials, such as color charts, inks, proof paper, brayers, and the like are provided by I. P. I.



TECHNICAL LITERATURE

Composition for Boxmakers

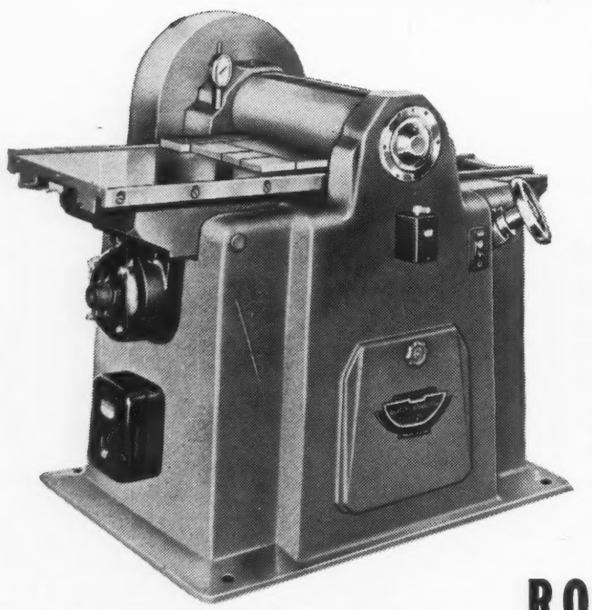
Of interest to folding box and carton manufacturers is a booklet recently issued by the Ludlow Typograph Company entitled *Ludlow Proves Profitable to Folding Boxmakers.* The pamphlet reprints selected advertisements addressed to boxmakers, describing and illustrating how the Ludlow system of job and display composition may be employed in the folding box field.

Among the advantages featured are Ludlow all-slug composition and make-up, repeat-casting of slugs to provide for printing box covers in gangs, facility in replacing slugs which wear in printing hard stock, changing slugs for imprints, and resources of Ludlow equipment for making up all-over designs.

The cover of the booklet in two colors gives the impression of a stacked pyramid of boxes. The cover forms were produced by repeat-casting of slugs, using five each of two matrices.

A copy of this booklet will be sent upon request to the Ludlow Typograph Company, 2032 Clybourn Avenue, Chicago, Ill.

OUR WAR PRODUCTION NOW ASSURES
Barker Rotary Shavers LATER



● We believe that in converting our manufacturing facilities to war materials production now, we are helping win this war. And winning the war is the only way we can be assured of production of Barker Rotary Shavers in the post war years to come.

● At the moment then, we cannot supply Barker Rotary Shavers. If, however, you have one of these shavers in your plant we will do everything we can to help you keep its production rolling. Furthermore, if you are contemplating the purchase of a Barker Rotary Shaver after the war we will be glad to confer with you at any time.

Please be assured of our cooperation.

ROBERT W. BARKER, Inc.
212 South Darien Street, Philadelphia, Pennsylvania

PITMAN

Engravers Supplies

Zinc Copper
Equipment Chemicals
Special Processes

Serving the Photo-Engraving Industry Since 1906

Representatives at A.N.P.A. Conference

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Bob Grubbe	Gus Carlson
Paul Schmidt	Roy Smith

Ask our representatives about the new processes for making better newspaper engravings. They will be pleased to discuss any engraving problems with you.

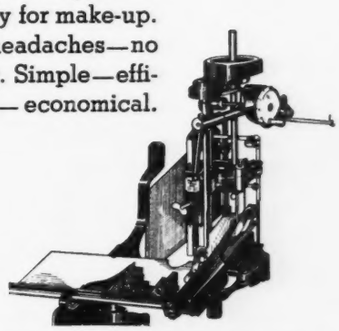
Harold M. Pitman Co.

Chicago
51st Ave. and 33rd St.

New York
441 Lexington Ave.

Odd Measure Slugs Sawed AUTOMATICALLY

Saws each slug to the desired length as it comes from the line-casting machine and deposits it in the galley ready for make-up. No lost time—no headaches—no hand slug sawing. Simple—efficient — accurate — economical.



MOHR SAW

MOHR LINO-SAW CO.
128 N. Union Avenue **Chicago, Illinois**

Acclaimed by All!

- **Zephyr Halftone Black**
- **Zephyr Super Black**
- **Zephyr Utility Black**

Available for any job...
Sets with lightning rapidity...
Backs up clean in 30 minutes...
Dry as a bone in one hour...

Try them and you'll buy them.

SERVICE FROM COAST TO COAST

Beneath this stack: experience, research and service are at your command.

Sinclair and Valentine Co.

MAIN OFFICE AND FACTORY: 611 WEST 129th STREET, NEW YORK, N. Y.

Albany Baltimore Birmingham Boston Charlotte Chicago Cleveland Dallas Dayton Detroit Havana Jacksonville Kansas City Los Angeles Manila Miami Nashville New Haven New Orleans Philadelphia San Francisco Seattle

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If You Can't Get A New TYPESETTING MACHINE

you can improve present equipment with

CUSHMAN OFFSET MOTORS

The Cushman Offset Motor — the perfect drive for Intertype, Linotype, and Linograph machines — will give old machines a new lease on life for the duration. Easily attached, they use either A.C. or D.C. current, have front bearings easily accessible for adjustment or replacement, are well ventilated. Cut-out for single phase motor, moving parts actuated by centrifugal force, with rubber contact between contacting faces. Write today for complete details and prices.

CUSHMAN ELECTRIC COMPANY

69 South Main Street **Concord, N. H.**

EXCUSE US!

We're on a rush job for Uncle Sam

★ Right now won't you excuse us for not taking orders for saws and other Nelson equipment? As a matter of fact, our machines and our men are tied up on the most important job we have ever had — a rush job for Uncle Sam. In spite of all our rush work, we are looking forward to that armistice day when we can again serve the printing industry. In the meantime, if we can perform any services in helping maintain your Nelson equipment, or if you want information on new equipment for after the war delivery, we will be very glad to have you write us in detail.

C. B. NELSON CO.

728 S. Dearborn St. Chicago, Ill.

Join The Soldiers of Lead

PRINTING Needs Trained Men and Women

As in every emergency, the printing industry plays an important role. The 26 characters of the alphabet become the soldiers of lead—ready for the tasks of U. S. defense. The printing industry is calling for adequately-trained men and women.

PRACTICAL TRAINING *in Publishing and Printing*

Advanced instruction in every phase of printing. Course is based on actual working practice with modern types of equipment and devices. Graduates enter printing prepared for rapid promotion to IMPORTANT jobs in the industry.

Investigate! —For detailed information, write to DEPARTMENT OF PUBLISHING AND PRINTING.

Rochester ATHENAEUM and MECHANICS INSTITUTE

• ROCHESTER NEW YORK •

WPB EXPLANATIONS

(Continued from Page 2)

LEAD: Unchanged at 90% of either third or fourth quarter of 1941; electrotypers molding lead exempted from restrictions. Further restrictions likely because of increasing demands for War production.

LEATHER: Order M-114 provides that no tanner shall process per month more than 80% of 1/12 of the sum total of all goatskin, kidskin, cabretta or India goatskin processed by him in 1941.

MACHINERY: Order L-83 requires specific authorization for sale, transfer, or delivery of new, second-hand, and rebuilt printing machinery in excess of $200 value. Permits repair and maintenance parts up to $1,000 for a single piece of existing machinery, with no limit for parts in case of actual breakdown.

Amendment No. 1 to L-83 permits machinery manufacturers to continue production until May 15, with no change in requirements for specific authorization for sale, transfer or delivery.

MAGNESIUM: Under complete allocation; Order M-2-b extended until October 31, 1942.

METHYL ALCOHOL: Amendment No. 4 to Order M-31 provides that restrictions shall not apply to any one establishment using 55 gallons or less in any one calendar month.

NICKEL: Has become considerably more critical. Allocation to our industry for May is 6,500 pounds. Electrotype printing plates not covered by nickel scrap order M-6-c, since proportion of nickel in used printing plates is less than ½%.

Nickel Salvage Program IRB-5 was not intended to requisition normal stocks of nickel anodes used for plating electrotypes. Any establishment receiving IRB-5 Forms and affidavit should complete and return as directed. Show stocks of new and partly used anodes, of dry nickel salts, and estimated quantity of nickel salts in solution. Show on affidavit form that you do not wish to sell nickel anodes, because nickel is used for plating electrotype printing plates.

OBSOLETE PLATES: It is suggested that all plants start listing inventories of obsolete printing plates and forms, to determine which can be scrapped.

OFFICE FURNITURE (Metal): Order L-13-a freezes *all* metal office furniture in *manufacturers'* hands. This includes filing cabinets, visual record equipment, wastebaskets, storage cabinets, desks, machine stands, shelving, etc.

OFFICE SUPPLIES: Order L-73 limits the use of iron and steel, prohibits copper, tin and other scarce materials in the manufacture of such office supplies as clips, thumbtacks, stapling machines and many other items.

PAPER: Deliveries have improved on practically all kinds of papers. The Newsprint Association of Canada has announced that there is sufficient newsprint to carry North American consumers through 1942, despite possible hydroelectric power diversion for war purposes.

Despite rumors to the effect that a shortage of printing papers is imminent, it is believed that there will be sufficient paper, even under abnormal conditions, to meet the demands for essential needs. No official determination of the relative essentiality of the end-product uses of printing papers has yet been made.

PLASTIC BINDING: Plastics containing phenolic resins are extremely critical; acetate, cellulose and butyrate plastics previously recommended as substitutes are also becoming very critical.

PRICE CONTROL: Newspapers, books, magazines, periodicals, materials furnished for publication by any press association or feature service and advertising services are specifically excluded from the regulations of the General Maximum Price Regulation.

Commercial printing in all forms not specifically excluded are understood to be subject to the limitations of the General Maximum Price Regulation.

The Office of Price Administration recognizes the possibility that cases will arise in the Printing and Publishing Industry where the publishing and service items specifically excluded and the commercial printing which is subject to regulation may seem to conflict. Such cases should be presented to O.P.A. in the prescribed manner for a decision.

PRIORITY APPLICATION: No priority applications (PD-1A, etc.), will be considered hereafter unless the exact required delivery date is filled in. "Immediately" or "At Once" will get no action and applications will be returned to senders. No more than one month's supply of materials to be incorporated in the product will be authorized on one application.

PRODUCTION REQUIREMENTS PLAN: The Graphic Arts and related trades are at present excepted from coming under this Plan.

RUBBER AND TIRES: The rubber situation has become still more serious, and more rigid controls over all uses of rubber are being put into effect as rapidly as possible. Use of reclaimed rubber is now subject to same restrictions as that of new rubber.

RUBBER CONSERVATION: (Knife Rubbers): Cutting knife rubbers can be successfully reconditioned. After the rubber has seen normal service on one side, it can be ground down to eliminate the knife cut, a piece of wood inserted in the cutting knife box to make up the amount ground off and the rubber re-inserted upside down.

SHELLAC: Order M-106 provides that to June 30, 1942, shellac may be used up to 75% of 1941 rate of consumption (two optional bases provided), and thereafter not over 35% of 1941 usage.

SUGGESTIONS FOR CONSERVATION BY GRAVURE PRINTERS, ENGRAVERS AND LITHOGRAPHERS:

(a) Plate Ballard gravure cylinders to a shell of .005 instead of .006. This practice is in use in a number of plants—no difference in results is apparent.

(b) Do more color finishing on the cylinder, thus reducing make-overs; some shops have practically eliminated them.

(c) Gravure printing sheets can be flattened, polished on the back and re-used. Permission must be secured from W.P.B., Reference M-9-b.

(d) When the supply of dragon's blood is exhausted, a change can be made to a commercial etching powder which is now available.

(e) Ordinary talcum powder can be used as a substitute for magnesium carbonate, for powdering letter-press plates.

(f) In deep-etch lithography, Furfuryl Alcohol can be substituted for those customarily used. Most of the alcohols now in use for deep-etch are on the critical list.

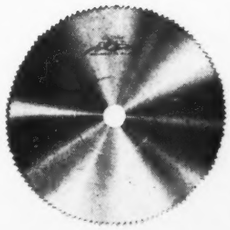
TINFOIL AND SOLDER: Regulations provide for a maximum tin content of 30% after May 1. Electrotypers, having an inventory of material with a tin content in excess of the maximum, and who have not submitted in writing a listing of each kind, with the formula, for instructions as to further use or disposition, should do so *immediately*. Write to this branch. The tin situation is so serious that further restrictions are anticipated.

TRANSPORTATION: Recent Orders issued by the Office of Defense Transportation will restrict deliveries of all establishments in this industry. These orders, combined with a shortage of tires, will result in drastic curtailment of deliveries.

TYPEWRITERS: Under the rationing order, new and used typewriters cannot be purchased outright except through rationing certificates. However, any person or business needing typewriters is entitled to rent a used office machine or new portable directly from any dealer.

WRAPPING TWINE: Order M-84, Amended, provides that no user of wrapping twine containing sisal or agave fibre may carry more than one and one-half month's supply, nor order for future delivery more than one month's supply. Either the previous month's figure or the figure of the corresponding month of 1941 may be used. Practically all hard twine contains these fibres.

ZINC: Increasing military demands will result in further restrictions on civilian uses. Metallic zinc will be placed under complete allocation control beginning June 1, 1942.



Play Safe with Your Saw Blades—THEY are HARD TO REPLACE

Your Composing Room, Stereotype and Engravers Saws will cut better and last longer when sharpened on our automatic machines. They will be returned the same day received. Full satisfaction guaranteed.

SHARPENING PRICES (Return Postage Prepaid)
75c Each or 10 Sharpening Coupons $6.00

NEW SAW BLADES
Send for prices and trade-in plan on Saws for any make machine.

AUTOMATIC SAW SHARPENING CO., 730 E. Ohio Street, INDIANAPOLIS, IND.

Safety PLUS Efficiency

with **JUSTRITE** *Safety* **CANS**

Here's the safe, sensible way to store and handle benzine and other 'flammable liquids. Trigger handle keeps spout closed except when pouring . . . stops leakage and evaporation. Built to last for years. Body of heavy lead-coated steel, double seamed and soldered. Red baked enamel finish. Made in 7 sizes from 1 pint to 5 gallons.

Ask your supplier or write for catalog and prices

Approved by Underwriters' Laboratories, Inc.

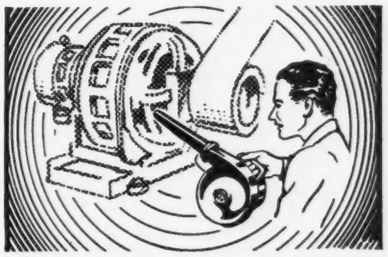
JUSTRITE MANUFACTURING CO.
2061 N. SOUTHPORT AVE. CHICAGO, ILL.

QUICKER CLEANUPS

at Lower Cost with the

TORNADO

BLOWER-CLEANER



IN your all-out defense against dust danger and damage, use the TORNADO. Gets dust, dirt and lint *all out* of motors, linotypes, presses, folders. Makes motors and machines last longer. Also convertible for vacuum-cleaning of shelving, paper stock and type cases. Adaptable for spraying paint and insecticide. Keep your costs down — your profits up — by keeping your plant clean with a TORNADO.

Write for details and Free Trial Offer!

TAKE THE DUST OUT OF DUST IN with BREUER'S BALL BEARING **TORNADO** PORTABLE ELECTRIC BLOWER

BREUER ELECTRIC MFG. CO.
5114 N. Ravenswood Ave., Chicago

Conserve SPACEBANDS AND MATRICES

By regular daily use of the **FW-45 Automatic Spaceband Cleaner** which cleans and polishes 30 line-composing machine spacebands in 45 sec. Get rid of the drudgery of cleaning spacebands by hand, the efficiency of which varies with the person doing the cleaning. Send for illustrated Bulletin in which is described a truly useful machine.

FULLER MACHINE CO., 17 Haigh Ave., Schenectady, N. Y.

PRESS BLANKETS

Tailored to fit the press and printing requirements. Cork, oil-proof synthetic rubber or combination for newspaper, magazine or job work, any press .022 to .151 gauge. . . . *Guaranteed for service; will not mat, stretch or creep.*

ACME PRESS BLANKET CO., 162 North Wells Street, Chicago

Remanufactured

NEWSPAPER EQUIPMENT

Late style Model 8 Linotype
10 ft. Steel Makeup Table
16½ x 25 Potter Proof Press
Miller Universal Saw
Hoe Flat-cast Shaver
Eight Double-tier Steel Type Cabinets
Two 28 x 72 Steel Makeup Tables

The M. L. Abrams Company
1639 Superior Ave. Cleveland, Ohio

RICHARDS Saws SINCE 1910

"MULTIFORM"
"ELECTROMATIC"
"DOMORE" "CLIPPER"
SAWS — ROUTERS — DIES
J. A. RICHARDS CO., Kalamazoo, Mich.

HUMIDIFYING—COOLING—DRYING
B. OFFEN & CO.
608 So. Dearborn St., Chicago
Write for illustrated pamphlets
"AIR CONDITIONING AND HUMIDITY CONTROL"

Stop Offset Trouble!

Send today for our new bulletin, "10 Ways to Avoid Offset." 14 pages of valuable hints for the pressman — how to improve presswork save money — by stopping Offset trouble.

E. J. KELLY CO.
1807 N. Pitcher St. Kalamazoo, Mich.

GENERAL REPAIR OF LINOTYPE AND INTERTYPE MOLDS (ANY KIND, ANY SIZE). PARTS, ETC., SINCE 1912
Makers of Reid Magazine Racks, Etc.
WILLIAM REID & CO., 2271 Clybourn Ave., Chicago, Ill.

METALS

Type, Stereotype and Electrotype Metals for the Trade
Write for Prices and Information
GARDINER METAL CO., 4820 So. Campbell Street, Chicago

Gardiner METAL CO.

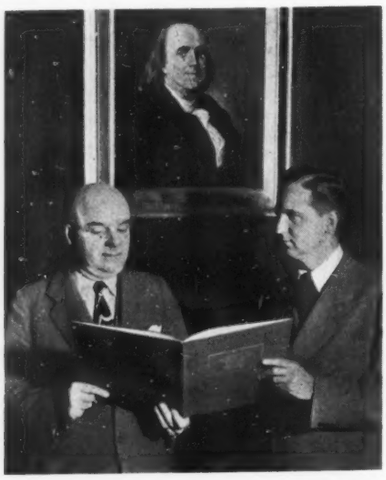
Technical Books

may be ordered through Printing Equipment Engineer. See page 5.

Announces Contest

PLANS for more complete and effective cooperation of the printing industry in the nation's all-out war effort have been made public by Augustus E. Giegengack, Public Printer. The major elements in the forthcoming program are: The New York & Pennsylvania Company, 230 Park Ave., New York, N. Y., is announcing this month a nation-wide Patriotic Slogan Contest for printers and lithographers.

The purpose of the contest is to stimulate printers and lithographers to encourage their customers to use patriotic slogans and messages on all types of printed matter. These messages may be official material supplied by various Government departments, such as War Bond cuts, or may be messages originating with the American Red Cross, United Service Organization or other patriotic causes.



A. E. Giegengack, Public Printer, meets with Peter S. Paine, vice president of the New York & Pennsylvania Company, at the Government Printing Office, Washington, D. C., to discuss report to the Secretary of the Treasury detailing cooperation of the printing industry in the War Bond drive and announcing the forthcoming Nypen Patriotic Slogan Contest for Printers and lithographers (sponsored by the New York & Pennsylvania Company).

Prizes, aggregating $1000 payable in War Bonds, will be distributed, prize winners being adjudged on the basis (1) of the number of clients using patriotic slogans and messages; (2) of the number of different pieces of printed matter so imprinted; (3) of the total distribution of those pieces; and (4) of the ingenuity used in the employment of the material. Distribution of a folder giving complete details of the contest may be obtained from the New York & Pennsylvania Company, at the address given above.

The Committee of Awards will be composed of the following members: George E. Loder, President, National Process Company, Inc., New York; Harry O. Owen, President, C. O. Owen & Company, Inc., Chicago; Harford Powel, Director of Information, War Savings Staff; Augustus E. Giegengack, Public Printer.

All departments of the government will be notified that cooperation of the printing industry in the dissemination of official slogans and messages is available through the Government Printing Office.

After proper authorization from the Government departments concerned, the Government Printing Office will prepare and distribute to the printing industry, upon request from individual printers and lithographers, the necessary cuts to carry such slogans and messages.

In a report recently presented to Henry Morgenthau, Jr., Secretary of the Treasury, it is pointed out that the printing industry has already proven itself to be an effective channel of public relations and promotion through the wide use made by the industry of War Bond cuts. More than 14,000 of these cuts have so far been distributed to commercial printers by the Government Printing Office. Many employing printer groups report that the demand for the cuts is so great that it is almost impossible to keep an adequate reserve supply on hand.

The success of this test has encouraged the Government Printing Office to broaden the opportunities for cooperation of the graphic arts in the important service of public information. It is believed that the action taken by the New York & Pennsylvania Company in sponsoring its Patriotic Slogan Contest will focus the attention of the entire industry on the desirability of active cooperation.

Monotype Earnings

President Harvey Best of Lanston Monotype Machine Company, submitted the forty-ninth annual report at the annual stockholders' meeting held in Alexandria, Va., on May 7.

Net earnings for the year (including profit of Monotype Company of California) were $193,078.77. This profit ($3.78 per share compared with $1.25 per share for the previous year) is after depreciation of $90,633.29, amortization and charge-off of patents and improvements $91,160.27, taxes other than income taxes $73,548.71 and setting up reserves for Federal and Pennsylvania income taxes of $96,000, a total of $351,342.27. Provision of $100,000 for possible losses which may result from war-time or post-war conditions was appropriated to contingent reserve. After this reserve and payment of dividends for the year of $1 per share, $41,798.67 was carried to surplus.

Operations of Canadian and Brazilian subsidiaries are not included in the above.

Mr. Best reaffirms a statement made some time ago in a previous report that the printing trade rates very high as a credit risk. For the year just closed, bad debts amounted to forty-seven hundredths of one per cent of sales.

From 85% to 90% of Monotype's man-power is now on a 53-hour per week schedule on war work. The company's program provides for setting up two- and three-shift operation as fast as skilled machine tool operators can be secured. No commercial manufacture is done other than required for keeping in operation machines already in customer plants.

Intertype Matrix Faces

Shown in a recent announcement by Intertype Corporation is a two-letter combination in the 18 point size—Bodoni with Bodoni Bold Italic. Also shown are Cheltonian Medium and Vogue Bold Oblique.

ABC abcdefghij 123
ABC abcdefghij 123
18 Point Bodoni with Bodoni Bold Italic

AB abcde 23
30 Point Cheltonian Medium

AB abcde 23
30 Point Vogue Bold Oblique

Joins Hoe as Metallurgist

John J. Fitzgibbon has changed positions from Foundry Engineer for the Whitehead Metal Products Co., New York, N. Y., to Metallurgist for R. Hoe & Co., Dunellen, N. J., effective May 11.

FREEZE ORDER

(Continued from Page 67)

any written instrument evidencing an interest in critical industrial machinery; provided, however, that nothing in this paragraph (XI) shall be construed to permit physical delivery or use of critical industrial machinery."

"(c) *Non - applicability to Repair or Maintenance of Existing Equipment.* The prohibitions of paragraph (b) hereof shall not be construed to restrict any delivery (1) to fill any order or group of orders of less than $1,000, placed with one or more suppliers within any four weeks' period, for parts intended for use in the repair or maintenance of any single existing machine, or a single machine delivered under the terms of this order, or (2) to fill any order of $1,000 or more for repair or maintenance parts when and only when there has been an actual breakdown or suspension of operations because of damage, wear and tear, destruction or failure of parts, or the like, and essential repair or maintenance parts are not otherwise available."

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free TECHNICAL INFORMATION and LITERATURE *for you*

Offered by Display Advertisers in PRINTING EQUIPMENT Engineer

For information circle the number on the convenient postage-paid return card corresponding to the paragraph in which you are interested. Give your name and title, company name and address, then mail. Manufacturer or supplier will send mechanical and production executives latest information. Keep informed—there is no obligation.

Composing Room

1 COMPOSING MACHINE— Intertype offers helpful booklet on maintenance of Intertype. See Back Cover.

2 TYPE METAL — Blatchford explains their testing and replacement service for type metal. See page 64.

3 LINECASTING MACHINE MOTOR — Return the postcard for details on the Cushman Offset Motor as advertised on page 75.

4 MATRIX CONTRAST — Prevents errors by lessening eyestrain. Send for printed matter as advertised on page 28.

5 COMPOSING MACHINE — Circle this number on the card for information on Ludlow equipment. See page 3.

6 PROOF PRESSES — For information on new Vandercook proving or pre-make-ready equipment, circle this number. See advertisement inside back cover.

7 MOLD COOLER — Linotype Parts Company will send you information on a Star mold cooler as advertised on page 69.

8 PAGE STORAGE CABINET — Circle the number for complete information on the Hamilton electric page storage cabinet as shown on page 69.

9 MATERIAL MAKING MACHINE — Send for complete information on the Monotype material making machine. See advertisement on page 13.

10 TYPE METAL — Send for the informative Imperial booklet on type metal problems. See page 45 this issue.

11 SAWS — Send for literature describing Hammond saws and routers. See page 73.

12 CUT CEMENT — Let E. A. Booth Rubber Company tell you how useful Zink Cut Cement can be. See advertisement page 21.

13 VERTICAL MITERERS — No priorities are required for a Rouse Economy vertical miterer. Complete information by circling number. See page 72.

14 SAW TRIMMER — You can get copies of new descriptive circulars on C&G saws by using the card. See advertisement page 12.

15 COMPOSING MACHINE — Mergenthaler offers you five maintenance booklets that are invaluable at this time. As advertised on page 43.

16 HONEYCOMB BASE — Blatchford will send you complete information on their base by circling this number. See advertisement page 70.

17 MOHR SAWS — For complete information on slug saws, circle this number and see advertisement on page 75.

18 SAWS — C. B. Nelson Company will gladly send you information on their saw equipment. See advertisement page 76.

19 METAL FEEDERS AND REMELTERS — A complete illustrated catalog on feeders and remelters is offered by the United American Metals Corporation. See advertisement page 71.

20 IMPOSING SURFACES — Complete details on imposing surfaces and other equipment by Challenge is offered. See advertisement page 73.

Platemaking

21 ROUTING CUTTERS — Get the John Royle Catalog 425 of routing cutters as advertised in this issue, page 66.

22 ZINC — Atlantic Zinc offers information on substituting AZ Alloy for copper in fine screen photos. See advertisement page 63.

23 MATRIX BACKING AND SCORCHER — American Publishers send samples of matrix backing or information on Model E scorcher. Circle this number. See advertisement page 24.

24 DRY MATS — To see their outstanding points, get a sample of Wood dry mats for newspapers. See page 65.

25 ZINC — Send the postcard for details on Edes engraving metals as advertised in this issue, page 68.

26 ENGRAVER'S SUPPLIES — Harold M. Pitman Company will be glad to have you send for information on their supplies. See advertisement page 75.

27 MOLDING BLANKETS AND BOARDS — Coyne & Paddock will send samples to those circling this number. As advertised on page 71.

28 ROTARY SHAVER — Circle this number for complete details on Barker rotary shaver as advertised in this issue, page 74.

29 PACKING FELTS AND MOLDING BLANKETS — Eastern Newspaper Supply suggests you send for free samples and catalog. Circle number and see advertisement on page 18.

30 DRY MATS — Certified offers an informative booklet on plate duplication. See advertisement page 26.

31 DRY MATS — If you want a Burgess mat salesman to call, circle this number. See advertisement on page 6.

Pressroom

32 NUMBERING MACHINES — Wetter offers you a unique booklet "Numbering For Profit." See page 66.

33 ROLLERS — American Roller Company will send you details on synthetic rubber rollers for newspaper work. See advertisement page 7.

34 PRESSES — American Type Founders will send descriptions of Little Giant and Little Chief presses. See advertisement on page 17.

35 PRESS DRIVES, PASTERS — Cline will supply information on drives and pasters as advertised on page 61.

36 PRESS BLANKETS — Get details from New England on their press blankets as advertised on page 10.

37 NEWSPAPER PRESSES — For complete story on Duplex Presses and other Duplex Equipment, send the postcard. See advertisement on page 27.

38 ROLLERS — Ideal offers you literature on proper care of rollers to prolong their life. Send the postcard. See page 15.

39 NEWSPAPER PRESSES — Use the postcard for any specific details desired on Hoe products. See advertisement page 47.

40 NEWSPAPER PRESSES — Wood Newspaper Machinery Corporation offers free consultation on newspaper presses and other Wood equipment. See page 22.

41 PRESS BLANKETS — For help on current pressroom problems concerning blankets or rollers, call on Vulcan. Use card. See advertisement page 1.

42 NEWSPAPER PRESSES — Goss research and engineering staffs are at your service. Circle this number and see advertisement on page 57.

43 PRESS BLANKETS — Circle this number if you are interested in Cushion Cork and Tingucork press blankets. See advertisement page 53.

44 PRESSES — Miehle will help you to obtain maximum results on Miehle presses. See advertisement on pages 8 and 9.

45 OFFSET PRESSES — Harris service organization will help you maintain equipment at maximum efficiency. See advertisement Inside Front Cover.

46 ROLLERS — Circle this number for complete description of Bingham rollers. See advertisement on page 25.

47 ROLLER REFINISHING EQUIPMENT — Detailed information offered on Black Rock grinding and polishing equipment. See page 16.

Paper and Ink

48 INK — Interesting story on Herrick news ink is sent to those circling this number. See advertisement on page 55.

49 COLOR INKS — Morrill offers information on color inks; circle this number. See advertisement on page 11.

50 INK — I.P.I. will send sample can and demonstrate new "Hardfast-Extra" non-scratch black ink to those circling this number. See advertisement on page 51.

51 INK — Investigate Velo Cold Set inks. Circle this number. See advertisement on page 20.

52 INK — Card brings desired information on Zephyr black inks. See advertisement on page 75.

53 INK — See Eagle advertisement on page 67, or use card for booklets shown.

54 INK — Complete information on Flint Arrowhead black and colors can be had by circling this number. See advertisement on page 19.

55 PAPER — Champion offers consultation service on paper for every use. As advertised in this issue on page 4.

Miscellaneous

56 BEARINGS — Circling this number brings you catalog on Norma-Hoffman bearings. See advertisement page 59.

57 BEARINGS — Get information from SKF on bearings for your requirements as advertised on page 49.

58 BEARINGS — Return the postcard for information on Timken Tapered Roller Bearings as advertised on page 23.

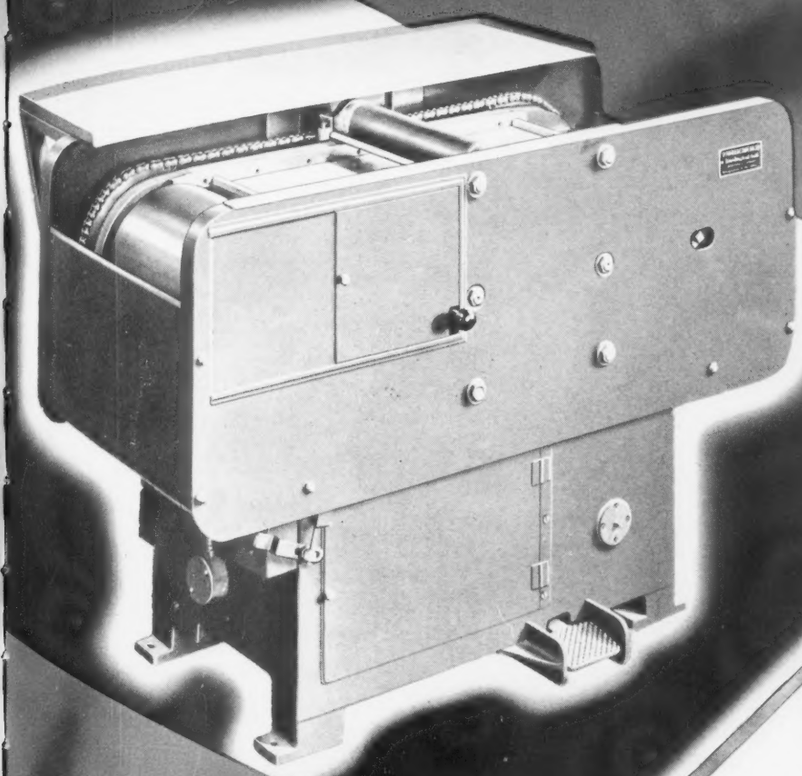
Delivery on VANDERCOOK PROOF PRESSES CAN BE MADE NOW

Though no new proof presses have been made for a number of months in the Vandercook factory, there are several models available for delivery from stock.

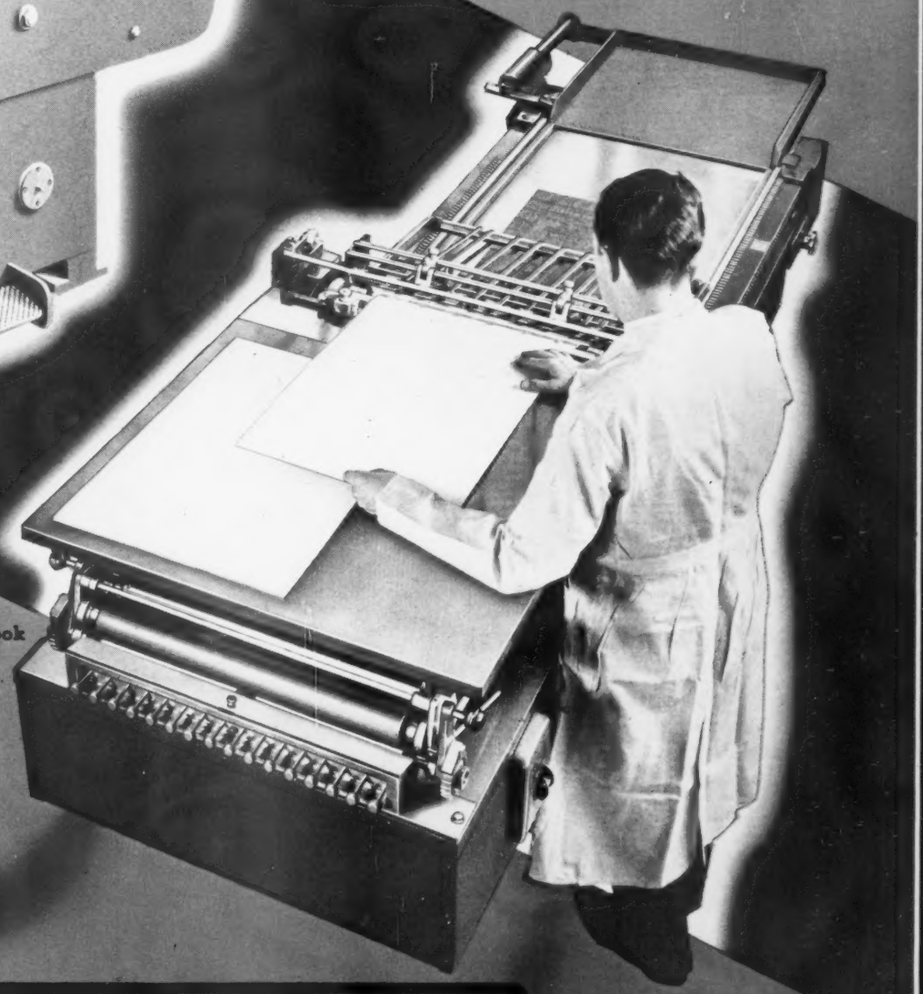
If you have a real need for a proof press or premakeready equipment, or it is necessary to replace present machines in order to get maximum efficiency, delivery can be made.

The Vandercook factory is 100% on war production. When present stock is sold, no equipment will be available until after the war pressure has been relieved.

If you will need proving or premakeready equipment soon, write or call, giving the full facts.



No. 23 Vandercook
Electric Proof Press

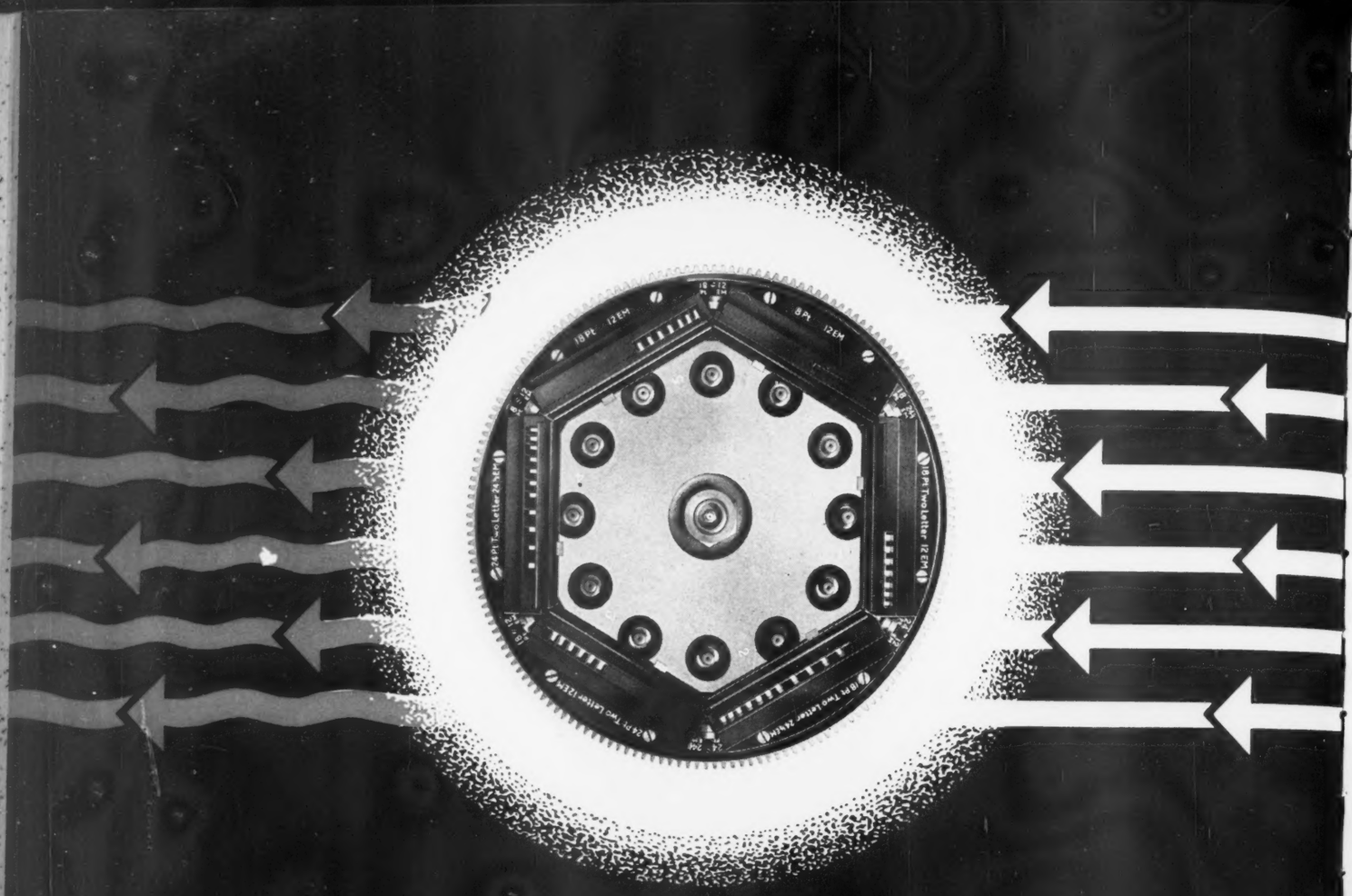


No. 325A Vandercook
Power Proof Press

VANDERCOOK

PROOF PRESSES · BLOCK LEVELLERS · HACKER GAUGES

VANDERCOOK & SONS, Main Office and Plant, 900 North Kilpatrick Avenue, Chicago, Illinois
Eastern Branch: 216 East 45th Street, New York, New York — Canada: Sears Limited, Toronto



When the mold says HOT... a breeze says COOL

THIS is just one example of big and little ways in which an Intertype cuts operating and maintenance costs—and helps make jobs so much pleasanter for operators, machinists, and MO's.

The Intertype mold is cooled like the most powerful of modern warplane engines. Excess, unwanted heat is blown away by *air*.

Most all line composing machines have come to air-cooling. The important fact is that the Intertype has *always* been breeze-cooled.

Why Blow a Mold?

Air-cooling makes possible easier *control* of mold temperature. Too much cooling may produce frosty faces; too hot a mold, porous slugs. A simple setting of the Intertype butterfly valve regulates the air according to the kind of composition required, helping to turn out perfect, solid casts.

TEXT IN WAVERLEY

YOU WHO HELP TO KEEP A PEOPLE FREE

IN A DEMOCRACY, *publishing and printing help to keep a people free, through the continuous dissemination of education, information, and news.++ Now that new typesetting machines may be obtainable only through proper priority ratings, Intertype suggests that you take care of your present equipment. A new, helpful booklet on the maintenance of your equipment is now available on request to* INTERTYPE, *Brooklyn*

INTERTYPE